U9080-16

Transportation and Commuting in Virginia, 1980

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July 1984

1980 Census Analysis Series, Volume 2

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ACKNOWLEDGMENTS

The author wishes to acknowlege the assistance of Julie Martin, Director of the Population Studies Center, for her patient review of several versions of this study; David Sheatsley, Research Assistant in the Population Studies Center, for helpful comments and suggestions; Kathryn Kunkel, for proofreading the text; Barry Jackson, for preparing the graphics for this report. Any remaining errors are solely the responsibility of the author.

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TRANSPORTATION AND COMMUTING IN VIRGINIA, 1980

This study presents an analysis of commuting statistics for the Commonwealth of Virginia, its counties, cities, metropolitan areas, and non-metropolitan labor markets. Commuting, broadly defined, is the daily traveling between one's place of residence and place of work by any of a variety of means. Some commuters walk to work, some take a taxi or ride a bicycle. Most, however, drive an automobile to work, or ride as a passenger in a car.

In some instances commuting represents only a small expenditure of time and effort because home and work are close together. For most, however, home and the workplace are far apart. Indeed, in a large number of cases workers are employed in one locality and live in another.

Commuting, and especially commuting between localities, has been increasing rapidly. In a span of only twenty years the number of workers commuting to a job located in a different locality increased by over 160 percent, from 430,000 workers in 1960 to 1,140,000 in 1980. In 1960 only 30 percent of all workers were employed outside their county of residence. By 1970 this had increased to 40 percent, and by 1980 to 51 percent.

Commuting is an important phenomenon for both individuals and communities. For the individual, commuting between localities creates an interest in both. At the jurisdictional level, adjacent localities that exchange large numbers of workers often develop cooperative ties, since the residents of one locality spend appreciable amounts of time in the other. Commuting also fosters the need for area-wide transportation planning. While the automobile has made widespread commuting possible, it has also created a host of problems. These include overcrowded and deteriorating highways, rush hour traffic jams, increased air pollution, and parking difficulties, to name just a few. Highway planning and development, the control of traffic flow during peak rush hours, and highway resurfacing constitute some of the areas where planning is important. Commuting statistics are also valuable as a means of indicating the general direction of traffic flows, and thus can be used to anticipate where problems may develop.

While commuting often leads to the creation of cooperative ties between localities, it may also lead to jurisdictional conflicts. Localities that are attractive to commuters may view their situation as one in which community facilities are used by commuters without adequate compensation. In some states this has led to commuter taxes, but in Virginia there is no legal provision for the imposition of this form of taxation. Several Virginia jurisdictions have, however, imposed residency requirements on their public employees. Residency requirements may be, at least in part, a reaction to this situation.

Commuting is important for other reasons as well. Commuting data is used in the analysis of industrial site location. It is especially important for those industries dependent on a high level of traffic flow for their success, as, for example, gas stations and convenience stores. Commuting data is also used to define labor market areas. The Virginia Employment Commission (VEC) defines labor market areas exclusively on the basis of commuting statistics. VEC criteria stipulate that two areas should be included in the same labor market if at least 15 percent of the workers in one jurisdiction commute to the

other. In this study the term labor market area is also used, but we have not attempted to apply as rigorous a definition as that used by the VEC. Our areas are more broadly defined, partly on the basis of commuting data, partly on the basis of geographic propinquity, and partly on the basis of having similar basic industries.

Finally, commuting may be thought of as a substitute for residential mobility. Because workers have the option of commuting to their jobs, they may elect to live at a distance from the workplace. If workers were unable, for some reason, to commute between jurisdictions and therefore had to live and work in the same locality, the result would be a vastly different distribution of population than actually exists. The data in Table 1 show some of the changes that would take place should this admittedly unlikely situation ever occur.

The first column of Table 1 shows the actual 1980 population for various classes and types of jurisdictions. The figures in the second column, Modified Population, were derived by adding (or subtracting) to the 1980 population of each locality the number of net commuters (and their families) entering (or leaving) that locality. These figures show the effect of moving every commuter, and family, to the jurisdiction in which the commuter was employed in 1980.

Population redistribution would be massive under this assumption of zero commuting. The state would lose nearly 14 percent of its population, largely due to heavy out-commuting from Northern Virginia to Washington, D.C. The Commonwealth's 95 counties would lose nearly 1.4 million persons, and be reduced in size by an average of slightly over 40 percent. The state's 41 independent cities, on the other hand, would gain almost 650,000 in new population, an increase of about a third.

The state's 10 Standard Metropolitan Statistical Areas would also be affected by this change. Their aggregate population would decline by about 430,000, or 12 percent. The largest changes would occur, however, within each metropolitan area. Central cities would increase by over a quarter, while the balance of the SMSA, the suburbs, would decline in population size by 38 percent. The nonmetropolitan portion of the state would also change, losing around 300,000 persons.

In the last panel of Table 1 each county and city has been classified by the proportion of its population residing in urban areas in 1980. Most of the state's independent cities are completely urban, while most of the large suburban counties, such as Chesterfield and Roanoke, are in the 50 - 89.9 percent urban category. The category 10 - 49.9 percent urban consists of a large number of counties that includes some suburbs, such as Albemarle, James City, and Pittsylvania, as well as many more rural counties. The category 0 - 9.9 percent urban includes 55 counties, many of which are completely rural. The data show that only the most heavily urbanized areas would gain population, and the first three urban categories would all lose large proportions of their populations. The biggest losers, numerically, are the most rural counties. This group would lose 346,000 inhabitants, or nearly 39 percent of their total population. The large suburban counties would suffer the greatest proportional losses, declining in population by about 56 percent, or 330,000 persons.

Table 1. Population Redistribution Under No Commuting Assumption

Locality Type	1980 Population (000s)	Modified Population (000s)	Difference (000s)	Percent Difference
Virginia	5,347	4,609	-738	-13.8%
Counties, total	3,327	1,942	-1,384	-41.6
Cities, total	2,020	2,667	647	32.0
Metropolitan Status:				
All metropolitan	3,636	3,204	-432	-11.9
Central Cities	1,454	1,854	400	27.5
Other	2,182	1,350	-832	-38.1
Nonmetropolitan	1,711	1,405	-306	-17.9
Percent urban:				
0 - 9.9%	891	544	-346	-38.9
10 - 49.9%	969	644	-325	-33.5
50 - 89.9%	584	254	-330	-56.5
90 - 100%	2,903	3,166	264	9.1

The main purpose in constructing Table 1 was to illustrate the large scale redistributive effects of a "no commuting" assumption on the state's population. However, these data also show, in an exaggerated form, the actual redistribution of population that occurs as a result of commuting. In this sense the Modified Population column in Table 1 shows the daytime population distribution after commuters have reached their distinations. The numbers in this column exaggerate this effect because both commuters and their families have been included in the derivation of these figures. A more accurate assessment of daytime population levels would be based only on the movement of commuters, and not their families.

Commuting is, quite obviously, dependent on the availability of a nearly universal transportation system. Since it often takes place over relatively long distances, it calls for a fast and affordable mode of transportation. In

Table 2. Means Of Transportation To Work: Virginia, 1960-1980

Transportation to Work	1960	1970	1980
All Workers	1,436,593	1,855,586	2,438,578
Private Auto or Carpool	921,939	1,481,687	2,106,403
Percent of All Workers	64.2%	79.9%	86.4%
Public Transportation:	136,521	135,021	124,520
Percent of All Workers	9.5%	7.3%	5.1%
Railroad, Subway, or Elevated	1,245	1,775	19,976
Bus or Streetcar	135,276	124,777	100,029
Taxi (a)	-	8,469	4,515
Walked to Work	133,267	133,983	117,185
Percent of All Workers	9.3%	7.2%	4.8%
Other Means	42,863	56,976	47,269
Percent of All Workers	3.0%	3.1%	1.9%
Worked At Home	147,695	47,919	43,201
Percent of All Workers	10.3%	2.6%	1.8%
Not Reported	54,308	-	-

(a) In the 1960 decennial census those taking a taxi to work were included in the Other Means category.

Source: Decennial censuses of the United States, 1960, 1970, and 1980.

some areas this has led to the development of rapid transportation systems such as subways, buses, and commuter trains. In nearly all cases it has led to the increased use of the automobile. Dependence on the automobile can be seen from the following statistics. In 1980 there were a little over 2.4 million workers residing in the state, and nearly nine of every ten commuted to work in a private automobile. The Census Bureau first collected data on means of transportation to work in 1960, and since that time the private automobile has become increasingly more important as the preferred method of traveling to work. In fact, all other major transportation categories have decreased in importance since 1960. As shown in Table 2, the number of workers using public transportation, those walking to work, and those working at home have fallen in actual numbers as well as proportionally. Although those using other means such as motorcycles and bicycles have shown a slight numerical increase since 1960, this category has nevertheless decreased as a proportion of all workers from 3.0 to 1.9 percent.

At a very basic level commuting represents the movement of workers to their workplaces. Underlying this process, however, are a constellation of factors concerning the historic development and interaction between modes of personal transportation, the location of industry, and residential location patterns.

HISTORICAL BACKGROUND

It was during the late 19th and early 20th centuries that the separation between place of residence and place of work developed. In reviewing this period we will note two basic developmental patterns, one that occurred in the northern states, the other in the South. As we will see, developments in Virginia did not follow either pattern exactly, but combined elements of both.

In the late 19th and early 20th centuries industrial and metropolitan growth in the northern states favored the development and expansion of the central city. Transportation modes (the streetcar, railroad, and shipping), and power generation (the steam engine) dictated industrial location in the central city in order to provide access to human, natural, and energy resources, as well as to ensure rapid communication between industrial units. These forces developed the central city into the economic heart of the metropolis and provided the focus for future population and economic growth.

In the South, however, the pattern was different. Industrialization was delayed for many years due to the region's continued specialization in the production of agricultural commodities. In the late 19th century the major economic forces in the South were agricultural and commercial, and the small industrial segment which did develop was geared to processing farm and forest products. These early industries were mostly located in rural communities, near the raw materials they needed, rather than in the largest cities. Because of high levels of rural population fertility and advances in agricultural technology, a progressively smaller proportion of the southern population could earn a livelihood in agriculture. Consequently, the surplus population was forced to migrate to both northern and southern cities. The population that moved to southern cities helped attract labor intensive industries to the South.

In the 20th century two different types of industry moved to the South; resource-oriented industries such as lumber, food, petroleum, and steel; and labor-intensive industries such as cotton-textile manufacturing. By the time these industries reached the South, however, the era of the streetcar and the steam engine was drawing to a close. The streetcar was replaced by the automobile (1), the steam engine by electricity, and older forms of communication, e.g., hand delivered messages, by the telegraph and telephone. As a consequence, industry did not need to locate in the central city, but was free to locate at the periphery of the city where large tracts of land were often available at low cost. Neither were industrial plants any longer constrained to locate near a work force, since the presence of the automobile made it possible for labor to commute to work over relatively great distances. In addition, the spreading use of electricity made it possible for a firm's operational units to be located at a distance from the source of power generation. Finally, the introduction of the telegraph and telephone brought about improvements in the speed and accuracy of communications between the different units of a single

firm. This made it possible for the firm's home office to be located near financial services, while the operational units could be sited in other locations.

In Virginia the results of these complicated interactions between industrial and transportation technologies, on the one hand, and residential settlement patterns, on the other, produced a mixture of growth patterns. In some cases it led to the concentration of industry in large cities, while in others it led to a more dispersed pattern. In 1919 (the first year in which manufacturing statistics were made available by locality), there were nearly 6,000 manufacturing establishments in the state, with a total employment of about 120,000. At this time there were eleven cities in Virginia with populations in excess of 10,000 persons. The total population of these large cities represented nearly a fourth of the state's population, and the total number of manufacturing establishments in these cities was 1,255, or nearly a fourth of the state total. Thus manufacturing plants were concentrated in Virginia's major cities to almost exactly the same extent as was the population of the state. However, those manufacturing firms located in Virginia's major cities were much larger, on average, than those located outside of the cities. Consequently, though the cities contained a quarter of all plants, they accounted for fully half of all manufacturing employment in the state.

Sixty years later, in 1980, there were 27 cities in Virginia with populations greater than 10,000, and their aggregate population was equal to slightly over a third of the state total. Using data for 1980-1982 on new manufacturing plant openings listed in Manufacturing Developments in Virginia (published by the Division of Industrial Development), there were 122 new plant openings with an expected total employment of 8,116 persons. Nearly a third of these new plants were located in Virginia's largest cities. Employment in these new plants was, however, only expected to equal about a third of all new employment. This pattern is similar to the one found in 1913, with the proportion of manufacturing plants located in the largest cities roughly equal to the concentration of population in these cities. A major difference lies in the employment statistics. In 1913 the proportion employed in manufacturing plants in the largest cities, 50 percent, was twice the proportion of the number of manufacturing plants located in these cities. In 1980 both the number of new manufacturing plants and their employment level was expected to be about equal, at 33 percent. During the last sixty years manufacturing employment has become somewhat less concentrated in the state's largest cities, indicating a continuing dispersal of workers and concomitant need to commute to work.

COMMUTING DATA

In our review of the history of industrial site location we noted that neither the northern nor the southern developmental pattern, by itself, provides a completely adequate description of the distribution of manufacturing plants in Virginia. Commuting data does, however, provide one method of analyzing the resultant distribution of industry. We can, for example, imagine a hypothetical situation in which industrial plants are spread evenly throughout the state. In this case interlocality commuting would likely be reduced from its current high level of 51 percent. The commuting data clearly show that the assumption

Table 3. Commuting Summary Statistics For Virginia Localities, 1980

Locality	Total Workers	Retention Rate	Net Commuting	Total Jobs	Net Jobs
ACCOMACK	12,131	75.0	-274	10,460	-1,671
ALBEMARLE	26,369	30.8	-9,414	14,473	-11,896
ALLEGHANY	5,549	16.7	-3,462	1,798	-3,751
AMELIA	3,640	45.4	-1,094	1,929	-1,711
AMHERST	12,240	40.8	-4,439	7,165	-5,075
APPOMATTOX	5,108	57.2	-1,189	3,624	-1,484
ARLINGTON	90,007	30.6	26,939	108,875	18,868
AUGUSTA	23,905	32.8	-10,408	11,598	-12,307
BATH	2,652	79.1	1,528	4,085	1,433
BEDFORD	14,767	20.6	-9,499	4,339	-10,428
BLAND	2,369	49.0	-760	1,462	-907
BOTETOURT	10,208	33.6	-4,867	4,608	-5,600
BRUNSWICK	5,855	64.1	-1,110	4,330	-1,525
BUCHANAN	11,249	83.7	3,425	13,999	2,750
BUCKINGHAM	4,670	45.0	-1,936	2,314	-2,356
CAMPBELL	20,282	31.1	-7,848	11,198	-9,084
CAROLINE	7,225	34.7	-3,360	3,044	-4,181
CARROLL	11,608	42.2	-5,351	5,763	-5,845
CHARLES CITY	3,087	18.2	-2,079	696	-2,391
CHARLOTTE	4,614	56.7	-1,127	3,183	-1,431
CHESTERFIELD	69,045	27.2	-33,655	30,280	-38,765
CLARKE	4,380	41.8	-273	3,618	-762
CRAIG	1,651	37.4	-934	699	-952
CULPEPER	9,434	69.2	-388	8,214	-1,220
CUMBERLAND	2,762	30.4	-1,430	1,056	-1,706
DICKENSON	5,176	61.6	-220	4,447	-729
DINWIDDIE	8,802	25.1	-4,678	3,398	-5,404
ESSEX	3,807	59.8	12	3,334	-473
FAIRFAX	316,497	34.8	-124,140	167,330	-149,167
FAUQUIER	16,709	51.0	-5,135	9,842	-6,867
FLOYD	4,678	54.8	-1,679	2,764	-1,914
FLUVANNA	4,473	35.4	-1,730	2,186	-2,287
FRANKLIN	15,468	58.9	-4,779	9,854	-5,614
FREDERICK	15,400	27.6	-6,505	7,448	-7,952
GILES	7,001	65.6	-599	6,155	-846
GLOUCESTER	8,308	44.4	-3,108	4,412	-3,896
GOOCHLAND	5,287	29.7	-2,303	2,415	-2,872
GRAYSON	6,890	51.4	-2,265	4,352	-2,538
GREENE	3,601	25.9	-2,148	1,157	-2,444
GREENSVILLE	4,136	15.7	-2,734	936	-3,200

Table 3, Continued

Locality	Total Workers	Retention Rate	Net Commuting	Total Jobs	Net Jobs
HALIFAX	12,777	39.3	-5,485	6,169	-6,608
HANOVER	24,854	30.3	-8,637	14,206	-10,648
HENRICO	93,162	30.9	-33,547	52,042	-41,120
HENRY	27,767	46.1	-8,502	17,174	-10,593
HIGHLAND	1,222	62.5	-357	833	-389
ISLE OF WIGHT	9,667	43.2	-1,238	7,026	-2,641
JAMES CITY	9,935	12.5	-6,275	2,647	-7,288
KING AND QUEEN	2,374	28.4	-1,189	878	-1,496
KING GEORGE	4,435	60.5	758	4,866	431
KING WILLIAM	3,983	39.6	-1,054	2,531	-1,452
LANCASTER	3,643	71.8	261	3,326	-317
LEE	7,425	59.1	-2,232	4,611	-2,814
LOUDOUN	28,297	43.5	-7,512	17,959	-10,338
LOUISA	7,361	40.3	-2,382	4,071	-3,290
LUNENBURG	5,022	68.0	-776	3,809	-1,213
MADISON	4,115	46.4	-1,617	2,164	-1,951
MATHEWS	3,085	49.1	-1,032	1,555	-1,530
MECKLENBURG	12,227	77.5	402	11,544	-683
MIDDLESEX	3,121	63.5	-638	2,270	-851
MONTGOMERY	25,793	77.7	6	24,592	-1,201
NELSON	4,541	40.9	-1,831	2,277	-2,264
NEW KENT	3,764	18.0	-2,221	1,202	-2,562
NORTHAMPTON	5,316	76.2	81	4,844	-472
NORTHUMBERLAND	3,322	56.9	-726	2,194	-1,128
NOTTOWAY	5,799	67.6	253	5,190	-609
ORANGE	7,704	60.0	-1,159	6,049	-1,655
PAGE	7,603	58.7	-1,854	4,935	-2,668
PATRICK	7,997	55.5	-2,355	4,877	-3,120
PITTSYLVANIA	29,340	32.3	-14,661	11,476	-17,864
POWHATAN	5,268	28.3	-2,550	2,331	-2,937
PRINCE EDWARD	6,073	70.8	552	6,173	100
PRINCE GEORGE	12,372	52.7	276	11,744	-628
PRINCE WILLIAM	70,501	27.3	-36,825	28,059	-42,442
PULASKI	14,926	65.7	-1,626	12,569	-2,357
RAPPAHANNOCK	2,485	44.1	-784	1,411	-1,074
RICHMOND	3,100	54.1	-277	2,562	-538
ROANOKE	34,316	15.7	-19,141	11,995	-22,321
ROCKBRIDGE	7,433	40.3	-3,005	4,081	-3,352
ROCKINGHAM	27,097	43.1	-9,939	15,297	-11,800
RUSSELL	10,265	59.8	-1,912	7,760	-2,505

Table 3, Continued

Locality	Total Workers	Retention Rate	Net Commuting	Total Jobs	Net Jobs
SCOTT	7,775	35.5	-3,779	3,504	-4,271
SHENANDOAH	12,521	71.0	-1,751	10,063	-2,458
SMYTH	13,248	81.3	33	12,646	-602
SOUTHAMPTON	7,255	41.6	-2,439	3,834	-3,421
SPOTSYLVANIA	14,109	16.2	-9,353	3,657	-10,452
STAFFORD	18,778	16.9	-11,481	4,667	-14,111
SURRY	2,269	44.6	-103	1,984	-285
SUSSEX	4,366	48.7	-1,075	2,718	-1,648
TAZEWELL	17,173	64.9	-2,245	14,086	-3,087
WARREN	8,886	61.6	-566	7,514	-1,372
WASHINGTON	18,285	51.8	-5,573	11,252	-7,033
WESTMORELAND	5,212	53.4	-1,617	3,192	-2,020
WISE	13,648	70.7	129	12,749	-899
WYTHE	10,659	73.5	-1,395	8,765	-1,894
YORK	16,455	18.6	-7,151	7,095	-9,360
ALEXANDRIA	61,629	24.8	4,351	60,053	-1,576
BEDFORD	2,479	47.6	2,506	4,514	2,035
BRISTOL	7,794	56.1	5,741	12,986	5,192
BUENA VISTA	2,767	56.4	-40	2,553	-214
CHARLOTTESVILLE	19,682	73.1	16,858	34,693	15,011
CHESAPEAKE	48,842	27.4	-20,964	23,894	-24,948
CLIFTON FORGE	1,873	50.4	637	2,302	429
COLONIAL HEIGHTS	7,917	23.7	-2,950	4,563	-3,354
COVINGTON	3,382	74.5	3,325	6,542	3,160
DANVILLE	20,318	81.7	11,301	30,321	10,003
EMPORIA	1,740	66.3	2,629	4,085	2,345
FAIRFAX	10,730	25.1	10,469	20,371	9,641
FALLS CHURCH	5,165	21.6	8,229	12,797	7,632
FRANKLIN	2,665	42.7	2,840	4,851	2,186
FREDERICKSBURG	6,675	48.2	9,012	14,685	8,010
GALAX	2,828	80.3	4,991	7,705	4,877
HAMPTON	55,175	54.4	-8	49,261	-5,914
HARRISONBURG	8,625	70.4	9,941	17,883	9,258
HOPEWELL	9,961	51.4	2,589	11,602	1,641
LEXINGTON	2,395	70.2	2,100	4,229	1,834
LYNCHBURG	29,769	81.7	20,213	47,305	17,536
MANASSAS	7,333	31.8	5,032	11,583	4,250
MANASSAS PARK	2,805	4.9	-2,152	388	-2,417
MARTINSVILLE	7,673	67.4	13,026	20,071	12,398
NEWPORT NEWS	66,763	59.8	7,984	68,290	1,527

Table 3, Continued

Locality	Total Workers	Retention Rate	Net Commuting	Total Jobs	Net Jobs
NORFOLK	127,920	57.4	31,411	144,429	16,509
NORTON	1,634	64.5	1,436	2,989	1,355
PETERSBURG	17,325	51.8	5,298	21,238	3,913
POQUOSON	4,055	18.3	-2,666	1,043	-3,012
PORTSMOUTH	41,605	57.5	7,144	45,301	3,696
RADFORD	5,242	64.5	3,540	8,609	3,367
RICHMOND	98,492	72.2	87,384	176,079	77,587
ROANOKE	42,672	64.0	20,533	58,174	15,502
SALEM	11,151	49.2	10,255	20,793	9,642
SOUTH BOSTON	2,940	67.9	3,608	6,378	3,438
STAUNTON	10,430	62.0	2,536	12,449	2,019
SUFFOLK	19,605	52.6	-2,664	14,390	-5,215
VIRGINIA BEACH	128,649	47.0	-41,959	76,796	-51,853
WAYNESBORO	7,181	72.0	6,595	13,243	6,062
WILLIAMSBURG	4,335	75.8	14,069	18,130	13,795
WINCHESTER	9,205	61.1	7,777	16,267	7,062

of industrial activity evenly distributed in space is unwarranted. If each locality provided sufficient employment for all of its working residents, then the number of commuters would probably be far fewer than is actually the case. The summary statistics presented in Table 3 indicate that few localities do, in fact, provide a sufficiency of employment opportunities.

Table 3, which summarizes commuting data by locality, contains five columns. The first column, Total Workers, shows the total number of persons age 16 and over residing in each locality and at work during the census reference week (the week immediately preceding the date on which the census questionnaire was completed). This number includes the civilian employed, as well as Armed Forces at work. The second column, Retention Rate, shows the percent of total workers that live and work in the same locality. Column three, Net Commuting, shows the number of in-commuters less the number of out-commuters. Column four, Total Jobs, indicates the total number of jobs (rather than workers) in the locality. It is equal to the number of persons residing and working in the locality plus the number of in-commuters to the locality. The last column, Net Jobs, shows the number of jobs in the locality in excess of the number needed to provide employment to all workers residing in the locality. This measure is the difference between column four, total jobs, and column one, total workers. Thus a positive number in the last column indicates a locality with more job openings than workers available to fill them, while a negative number indicates the opposite, a locality with an insufficient number of positions available for its working residents.

Virginia is composed of 136 localities, 95 counties and 41 independent cities. Only about a quarter of the localities generate a positive number of net jobs. Further, the last column in Table 3 indicates that localities with an excess of jobs are, more often than not, independent cities, rather than counties. Out of 37 such localities, only five--Arlington, Bath, Buchanan, King George, and Prince Edward--are counties. Thus it is the independent cities that provide most of the employment opportunities throughout the state. This finding supplements our earlier analysis of manufacturing employment over the 1913-1980 period, by showing that when all employment is taken into account there is a definite concentration of jobs in Virginia's cities.

COMMUTING PATTERNS

The large fold-out map (Map 1) provides an overview of commuting patterns throughout the state. Because of the complexity of the commuting patterns found within each Standard Metropolitan Statistical Area (SMSA) (2), each of these areas is treated as a single locality on Map 1. Detailed maps for each SMSA are located later in the text.

The circles on this map represent two different statistics. The size of the circle represents the size of the working labor force living in the locality. As the legend on Map 1 indicates, the largest circle represents a labor force of 50,000 or more persons. The second largest circle represents a labor force between 10,000 and 49,999. The next largest circle stands for a labor force between 5,000 and 9,999, and the smallest circle represents a labor force of less than 5,000 workers. The number appearing within each circle represents

the proportion of the labor force employed within the particular locality. Arrows drawn from each locality represent the proportion out-commuting to the locality to which the arrow is pointing. The percentage of a commutity's working residents out-commuting is shown only if it was 5 percent or more. For example, Louisa County shows a resident labor force of between 5,000 and 9,999, 40 percent of whom work in the county. Sixteen percent commute to the Charlottesville SMSA, and another 21 percent commute to the Richmond SMSA. This accounts for 77 percent (40+16+21) of Louisa's labor force. The remaining 23 percent commute to other localities. Readers interested in the precise number and destinations of in- and out-commuters are referred to Appendices 1 and 2. Appendix 1 lists each Virginia locality and the number and origin of in-commuters to that locality. Appendix 2 lists each locality and the number and destination of out-commuters from that locality.

Map 1 indicates that considerable variation exists among Virginia localities in both the number of working residents and the extent to which each locality retains its working residents. The number and direction of the commuting arrows indicate which jurisdictions act as magnets for workers in neighboring localities. Communities with only limited employment opportunities experience major out-commuting to one or more other localities.

The major portion of this study is devoted to an examination of each sub-state area in terms of its primary economic generators and a description of the major commuting flows within the area (3). The two primary generators of local employment are manufacturing firms and institutional employers. A strong manufacturing sector is often the basis for an area's attractiveness to workers from other localities (4).

A second important source of employment are the many different institutions found throughout the state. These include military bases, colleges and universities, long-term hospitals, and penal institutions. The review of institutional employers and the manufacturing sector is not intended to constitute a complete description of the economy of each area, but merely to indicate those sectors most responsible for generating large-scale employment.

Our examination of work-residence patterns begins with the Virginia portion of the Washington D.C. SMSA, followed by other localities in the eastern part of Virginia through south Hampton Roads. We then continue with localities in the north, central, and southern Piedmont; and then proceed to western Virginia from Winchester through Bristol.

Virginia Portion of the Washington, D.C. SMSA

The localities comprising Northern Virginia are usually thought of as suburbs for the thousands of federal government workers employed in Washington, D.C. While this view is accurate to some extent, it tends to obscure the fact that Northern Virginia has a strong and diversified manufacturing base of its own. Important manufacturing specialities located in the area include commercial printing and related specialities; electronics manufacturing, especially radio and television communication equipment, but also telephone and telegraph apparatus; electronic capacitors; electronic components; environmental controls;

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and electrical measuring instruments. Other manufacturing specialities include biological products, computing equipment, surgical and medical instruments, and space propulsion units and parts.

In addition to its strong manufacturing base, Northern Virginia is the home of several large institutions providing local employment. These include a number of military bases: Fort Myer and Arlington Hall in Arlington; Fort Belvoir in Fairfax County; and part of Quantico in Prince William County. Other major institutions in Northern Virginia include Marymount College in Arlington, Lorton Reformatory, George Mason University, and the Northern Virginia Training Center in Fairfax County.

The Virginia portion of the Washington, D.C. SMSA is unique among the state's metropolitan areas for several reasons. First, the total labor force in the nine Northern Virginia localities, 592,964 workers, makes it the largest labor market in the state, exceeding the Norfolk-Virginia Beach-Portsmouth SMSA by over 200,000 workers. Second, Northern Virginia retains only about 60 percent of its workers. This is the lowest retention rate among the state's ten metropolitan areas, and is a consequence of the area's proximity to Washington, D.C. About 186,000 persons commute out of the Northern Virginia portion of the SMSA, but of these 84 percent work in Washington, D.C., or in the Maryland portion of the SMSA.

Map 2 diagrams the major commuting patterns between the jurisdictions comprising Northern Virginia, Washington, D.C., and the Maryland balance of the SMSA. Map 2 shows the strong attraction of Washington, D.C., and, to a lesser extent, Arlington, as well as the complexity of the commuting patterns between these areas. In order to help clarify these patterns, Table 4 presents the full matrix of commuting flows among the Northern Virginia localities. Among the large flows of commuters, those of 5,000 and over, Arlington County receives significant numbers of commuters from Fairfax County, Prince William County, and Alexandria City. At the same time Arlington residents commute in large numbers to Fairfax County and the District. From Table 4 we see that Arlington has net in-commuting of about 27,000 workers.

Fairfax County also receives significant flows of in-commuters from Arlington, Loudoun, Prince William, and Alexandria. The net commuting figure for Fairfax County is negative, however, at about 124,000. This is due to heavy out-commuting to the District, Montgomery County and, to a lesser extent, to Prince George's County in Maryland.

Other important commuting flows in the area include large numbers of workers commuting from Fairfax County to Alexandria, Fairfax City, and Falls Church. Prince William County also sends roughly 5,500 workers to Manassas City.

In addition to the attraction of the District and Arlington County for localities within the SMSA, Map 1 shows that the metropolitan area attracts workers from an unusually large number of neighboring and more distant localities. Workers in Caroline, Page, Rappahannock, and Culpeper commute to Northern Virginia, despite the relatively long distances involved. Localities lying closer to the SMSA send even larger proportions (between 13 and 20 percent) of their work force to Northern Virginia. This group includes Clarke, Warren,

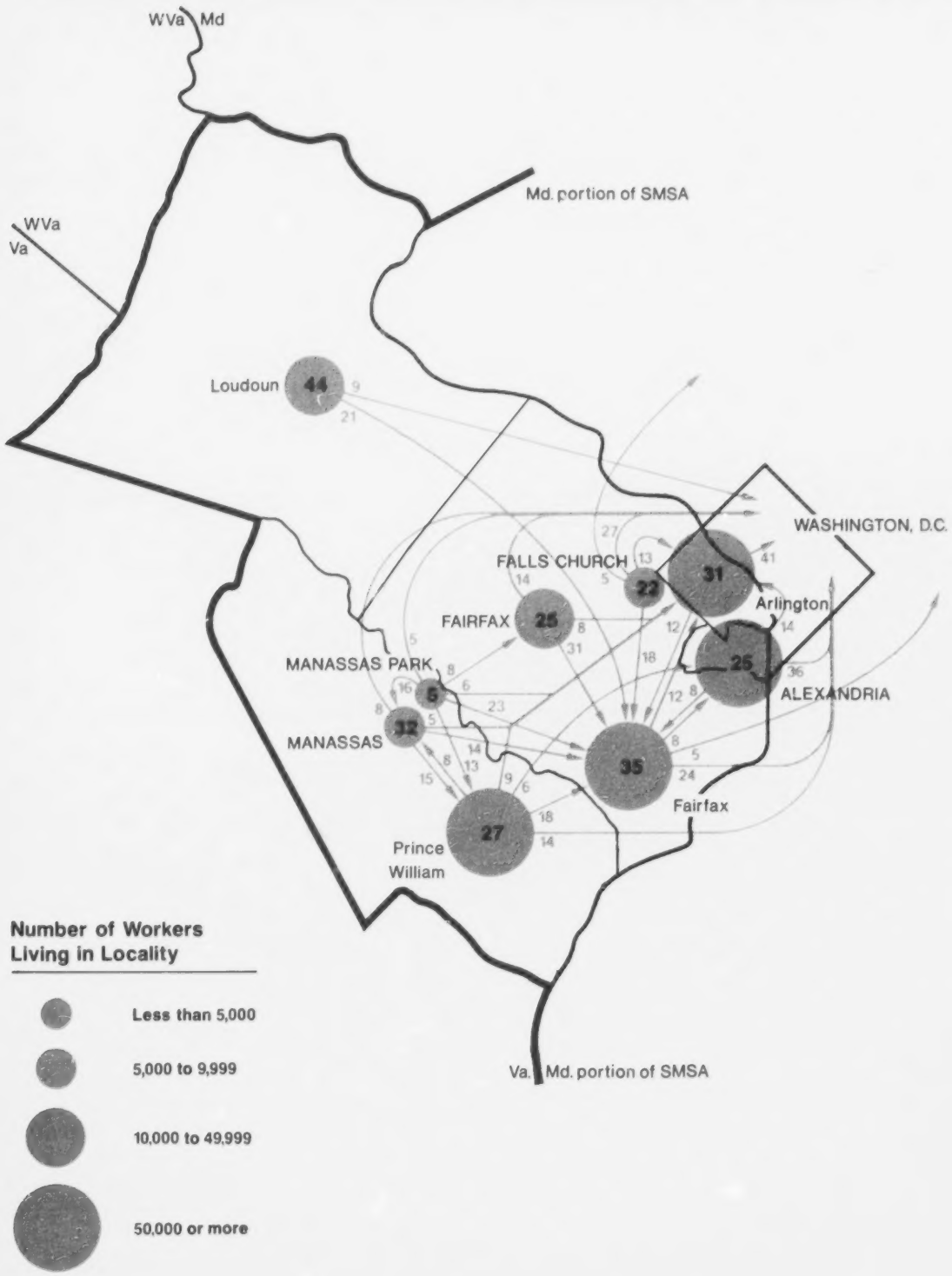
Table 4. Commuting Patterns In The Washington, D.C. SMSA (Virginia Portion)

Live In	Work In								
	Arlington	Fairfax County	Loudoun	Prince William	Alexandria	Fairfax City	Falls Church	Manassas	Manassas Park
Arlington	27,507	6,778	118	136	3,266	602	1,626	94	8
Fairfax County	36,399	110,227	2,311	1,760	25,925	11,268	6,458	1,264	60
Loudoun	1,176	5,968	12,294	119	415	628	401	122	-
Prince William	6,697	12,746	495	19,272	4,326	1,379	613	5,637	127
Alexandria	8,573	5,013	136	115	15,279	495	633	33	-
Fairfax City	903	3,342	81	103	390	2,697	197	67	18
Falls Church	695	920	14	10	46	44	1,117	12	-
Manassas	398	1,040	75	1,127	148	262	59	2,330	35
Manassas Park	167	653	73	364	73	221	98	455	138

Spotsylvania, King George, and Fredericksburg City. Finally, 41 percent of the workers living in Stafford County commute to Northern Virginia, one important reason why it was made part of the Washington, D.C. SMSA in 1981.

To summarize, Northern Virginia contains the state's largest labor force, but retains a smaller proportion of its own workers than any other metropolitan area in Virginia. The area is characterized by a diversified manufacturing sector, in addition to several large institutional employers. These include the federal government, several large military bases, and a variety of other institutions. Despite its low worker retention rate, Northern Virginia attracts commuters from a large number of neighboring localities, an indicator of its economic dominance. Commuting patterns between the jurisdictions within the SMSA are extremely complex, with a large interchange of workers taking place between nearly every pair of localities.

Map 2.
Commuting Patterns, Washington, D.C. SMSA (Virginia portion)



The Fredericksburg Area

The Fredericksburg area consists of five localities: Fredericksburg City and the counties of Caroline, King George, Spotsylvania, and Stafford. Local manufacturing firms are specialized in several different areas of metal fabrication, with primary emphasis on the production of motor vehicle parts and accessories, metal doors, sash and trim, and metal cans. Additional employment is generated by the presence of part of the Quantico military base in Stafford County and Mary Washington College in Fredericksburg.

In the aggregate these five localities contain a labor force of 51,222. King George has net in-commuting, due to the attraction of Dahlgren, and Fredericksburg City also attracts more in- than out-commuters. The other three localities have more out- than in-commuting. Because of the area's proximity to the Washington, D.C. SMSA, a large proportion of its workers commute to the north. The influence of Northern Virginia on the area can be seen in the high commuting proportions in Stafford (41 percent), Spotsylvania (20 percent) and Fredericksburg (14 percent). There is also significant commuting to Fredericksburg, which provides over 8,000 net jobs to the area. Commuting patterns for Caroline County show the influence of the Richmond SMSA, as over a fourth of its workers commute to that metropolitan area.

The Fredericksburg area's most notable feature is that, despite its relatively great distance from Northern Virginia, and the attractiveness of Fredericksburg City to local workers, the Washington area nonetheless exerts a very strong influence on the area. Another indication of this influence may be seen in the overall worker retention rate for these localities, 64 percent. This is one of the lowest rates found among the 25 areas delineated in this study.

Northern Neck

Virginia's Northern Neck (which includes Lancaster, Northumberland, Westmoreland, and Richmond Counties) contains a small labor pool of 15,277 workers, a majority of whom are employed in their county of residence. Manufacturing in the Northern Neck is dominated by the seafood industry, and there is a special emphasis on processing and packaging crabs, oysters, herring, eels, and other fish. There is also some concentration in tomato canning and the production of marine fats and oils.

Map 1 shows that there is considerable inter-commuting among these four localities. Out-commuting from the region is oriented towards Tappahannock in Essex County and Dahlgren in King George County.

Richmond SMSA

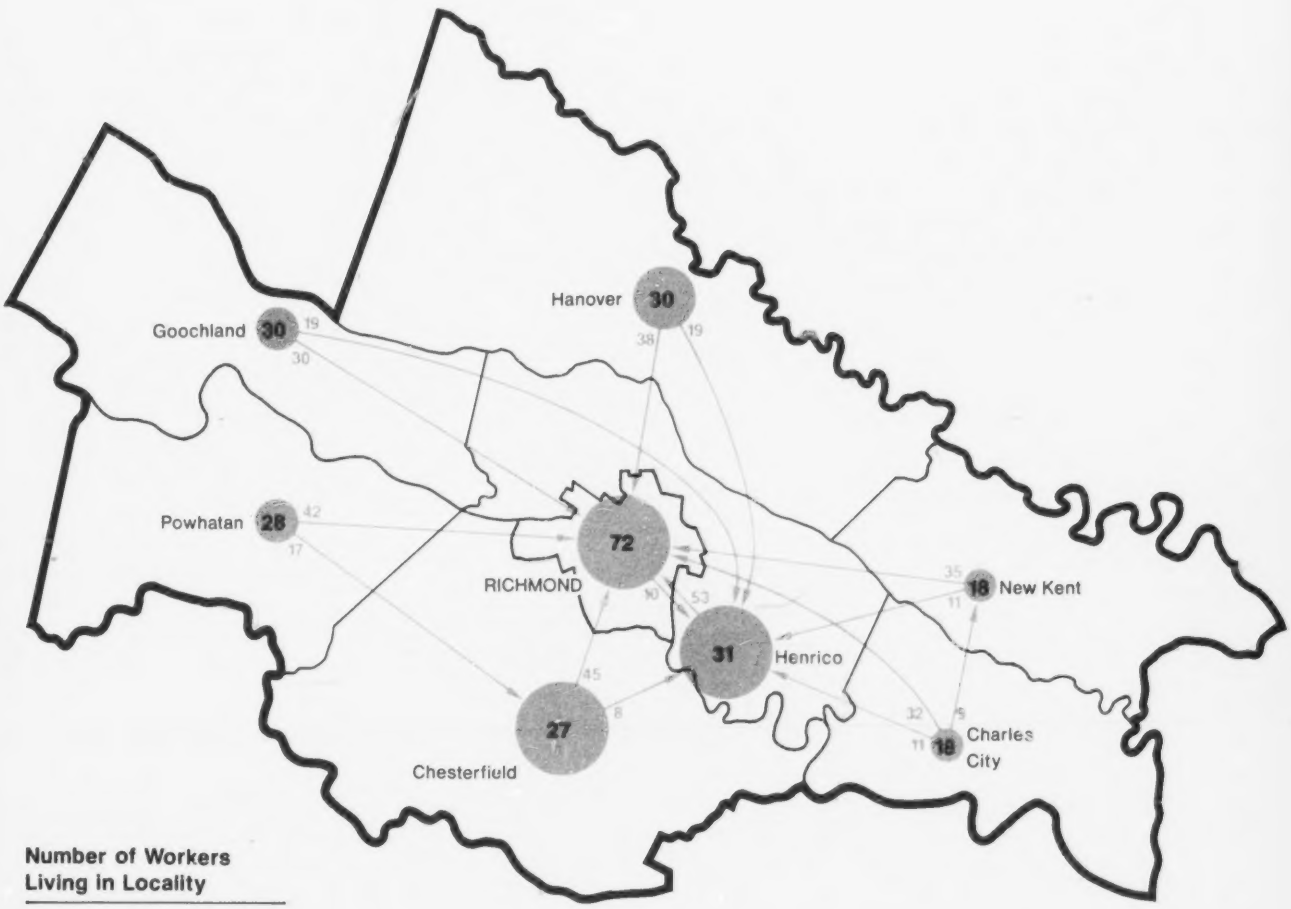
The Richmond SMSA enjoys a wide variety of basic employment generators. Among these are state government, the area's major colleges and universities, and a mature and well diversified manufacturing base. The major manufacturing plants in the area produce tobacco and bakery products, bottled and canned soft drinks, house furnishings and furniture, a wide variety of textile and paper bags and boxes, synthetic fibers, pharmaceuticals, aluminum foil, telephone and telegraph apparatus, and industrial controls.

Some of the larger institutional employers in the metropolitan area include Virginia State University in Chesterfield County, Randolph-Macon College in Hanover County, the University of Richmond, Virginia Commonwealth University, and Virginia Union University in Richmond City. There are also several large correctional facilities, including the Beaumont Learning Center, Powhatan Correctional Center, and Deep Meadow Correctional Center in Powhatan County (these employ over 800), and the State Penitentiary in Richmond, with employment of around 450. These local institutional employers provide the Richmond area with over 6,500 jobs.

Table 5. Commuting Patterns In The Richmond SMSA

Live In	Work In							
	Charles City	Chester-field	Gooch-land	Hanover	Henrico	New Kent	Powhatan	Richmond City
Charles City	563	28	-	8	328	282	-	991
Chesterfield	-	18,766	24	450	5,424	-	217	31,171
Goochland	-	35	1,568	83	993	-	100	1,604
Hanover	-	367	66	7,536	4,694	26	-	9,502
Henrico	85	1,820	289	2,752	28,776	119	58	49,751
New Kent	9	39	11	80	427	679	-	1,317
Powhatan	-	885	67	-	183	-	1,488	2,223
Richmond City	23	4,202	140	1,357	9,891	36	111	71,092

Map 3.
Commuting Patterns, Richmond SMSA



The Richmond SMSA, with 302,959 workers, is the state's third largest labor market area. As shown in Map 1, it attracts a large proportion of workers from the counties at its periphery. Caroline, Louisa, Cumberland, Amelia, King William, and King and Queen Counties each send over a fifth of their resident workers to the Richmond SMSA. The metropolitan area retains 86.7 percent of its own working residents, well above average for metropolitan areas in the state.

Map 3 shows commuting patterns within the SMSA, and Table 5 presents exact data on in- and out-commuting flows for the eight localities in the SMSA. Several points about these data should be noted. First is the high retention rate of Richmond City (72 percent) compared to the other localities in the SMSA. This is an important indication of the city's economic strength. A second point is that Richmond City is the only jurisdiction in the SMSA that provides an excess (over 77,000) of employment opportunities over and above those required by its own residents. In addition, each locality in this metropolitan area sends at least as high a proportion of workers to Richmond as it retains within its own boundaries. In fact, in most cases the proportion commuting to Richmond is well above the proportion retained locally. A third point of interest is the strong secondary influence of Henrico County. There is substantial in-commuting to Henrico from all the localities in the SMSA, with the single exception of Powhatan County.

The Richmond SMSA is one of the largest labor markets in Virginia. Its labor force is the state's third largest, and its worker retention rate is above the average of all areas defined in this report. Local employment is provided by a strong manufacturing sector, state government, and five colleges and universities. The large number of in-commuters attracted from neighboring and distant localities are also an indication of Richmond's status as a major economic area in Virginia. Within the SMSA Richmond City is clearly dominant, providing 77,000 jobs in excess of those needed by its own workers. Henrico County also attracts substantial numbers of in-commuters from the other jurisdictions in the SMSA.

Petersburg-Colonial Heights-Hopewell SMSA

The Petersburg-Colonial Heights-Hopewell SMSA consists of five localities, Dinwiddie and Prince George Counties and the cities of Colonial Heights, Hopewell, and Petersburg. The SMSA has a total labor force of approximately 56,000, making it one of the smaller metropolitan labor forces in the state.

Basic manufacturing enterprises in this metropolitan area are similar to those found in the neighboring Richmond SMSA. Its three major products are synthetic fibers, industrial organic chemicals, and tobacco products. In addition, there is significant employment in manufacturing firms producing ophthalmic goods, ball and roller bearings, and paperboard. There are several large institutions in the area, including Central State Hospital and the Southside Training School in Dinwiddie County, which provide over 2,500 jobs to the local economy; and the Federal Correctional Institute and Fort Lee in Prince George County.

Table 6. Commuting Patterns In The Petersburg-Colonial Heights-Hopewell SMSA

Live In	Work In				
	Dinwiddie	Prince George	Colonial Heights	Hopewell	Petersburg
Dinwiddie	2,206	462	314	391	3,446
Prince George	19	6,517	240	1,541	2,032
Colonial Heights	33	622	1,878	680	1,953
Hopewell	-	1,068	134	5,024	947
Petersburg	364	1,991	997	1,063	8,967

As shown in Map 1, the SMSA attracts workers from the counties lying to the south, Brunswick, Sussex, and Surry; nevertheless, about 8,000 workers commute from the Petersburg-Colonial Heights-Hopewell SMSA to the Richmond SMSA. This is one reason for the relatively low retention rate for resident workers, only 72 percent. Map 4 and Table 6 provide details about the commuting patterns within the metropolitan area. Most of the intra-SMSA commuting is directed towards Prince George County and Petersburg City, and to a lesser extent towards Hopewell City. These three localities retain approximately half of their working residents, while Dinwiddie County and Colonial Heights City retain only about a fourth.

As Table 6 shows there are no major commuting flows of over 5,000 workers within the SMSA, although it is worth noting that Petersburg City receives over 1,000 commuters from Dinwiddie and Prince George Counties, as well as from Colonial Heights City. Prince George County receives over 1,000 commuters from Hopewell and Petersburg, and Hopewell receives a substantial number of in-commuters from Prince George and Petersburg.

In summary, the Petersburg-Colonial Heights-Hopewell SMSA is one of the state's smaller metropolitan areas, and its worker retention rate is relatively low. This is due to a lack of sufficient local employment opportunities, as well as to its proximity to the much larger Richmond metropolitan area. Local employment is generated by manufacturing enterprises producing chemicals, tobacco products, and synthetic fibers. Commuting patterns show a significant outflow of workers to the Richmond SMSA, as well as more modest flows directed towards Petersburg, Hopewell, and Prince George County.

Middle Peninsula

The five Middle Peninsula counties include King William, King and Queen, Essex, Middlesex, and Mathews. These five localities have a combined labor force of 16,370. Essex and Middlesex have the area's highest retention rates at 60 percent, followed by Mathews at 50 percent, King William at 40 percent, and King and Queen at nearly 30 percent.

The major local industries in the Middle Peninsula include paperboard and warp knit fabric mills, the production of motor vehicle parts and accessories, and packaging seafood. Despite the presence of these manufacturing specialities there are actually relatively few plants in the area. This is an important reason for the significant commuting percentages to the Richmond and Newport News-Hampton SMSAs.

There is relatively little intra-district commuting in the Middle Peninsula, most workers from Essex, King and Queen, and King William commuting to the Richmond SMSA. In addition, Mathews, Middlesex, King and Queen, and King William all send significant numbers of workers to the Newport News-Hampton SMSA.

Newport News-Hampton SMSA

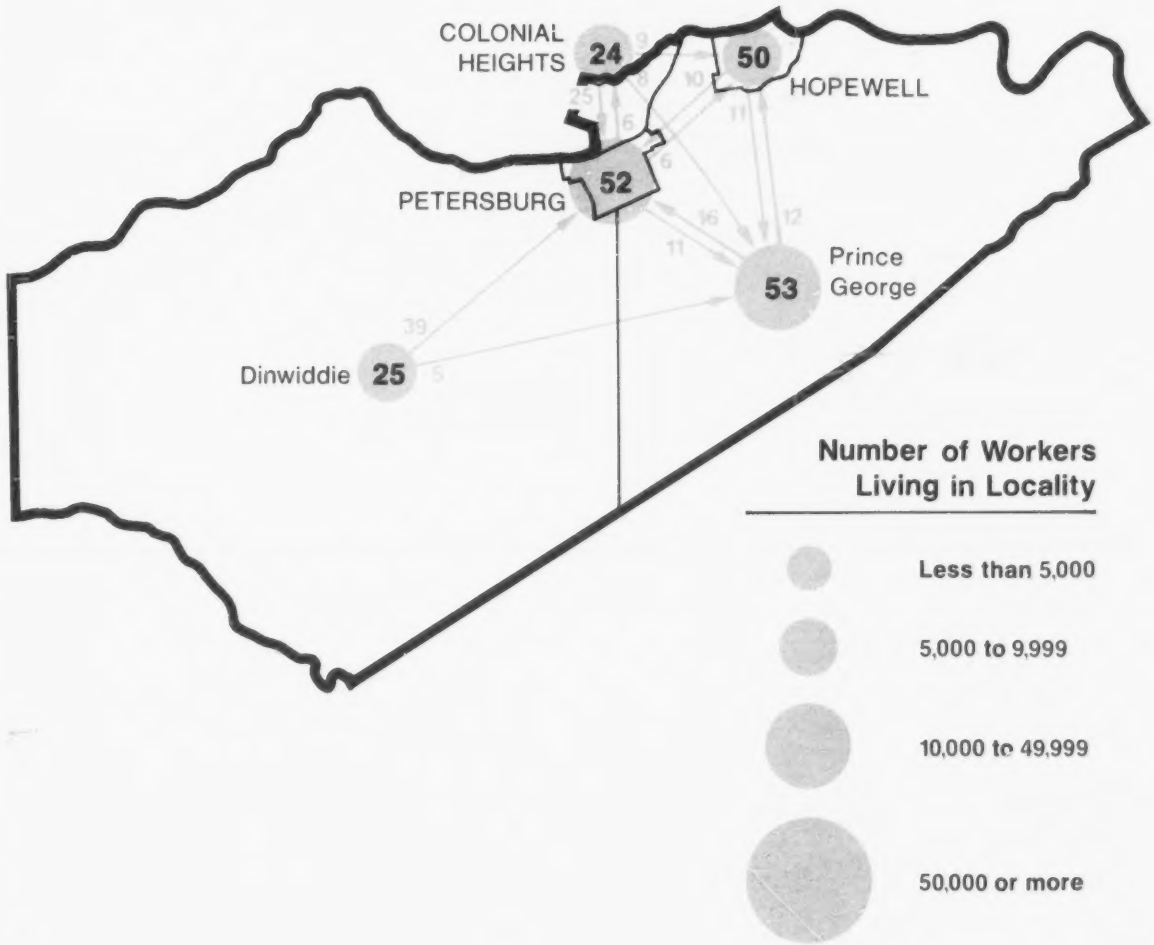
The Newport News-Hampton SMSA consists of seven localities: Gloucester, James City, and York Counties; Hampton, Newport News, Poquoson, and Williamsburg Cities. The Newport News Shipbuilding & Dry Dock Company is the area's largest employer. A number of other industries have located in the area in order to supply raw materials and finished goods to the shipyard. These include steel foundries and the manufacture of non-electrical and construction machinery. Other industries in the area with substantial employment include plants producing malt beverages, metal cans, packaged seafood, electronic capacitors, newspapers, and synthetic fibers.

There are a number of large institutional employers in the Newport News-Hampton area. Hampton City is the home of Hampton Institute, Fort Monroe, and the Langley Air Force base. Eastern State Hospital is located in James City County; the Naval Weapons Station is in York County; Newport News City is the site of Fort Eustis; and the College of William and Mary is located in Williamsburg City.

The SMSA has 165,026 resident workers, making it the fourth largest metropolitan labor force in the state. Newport News-Hampton supplies employment for about 84 percent of its working residents and attracts approximately 12,500 in-commuters from the surrounding counties of Isle of Wight, Surry, King William, King and Queen, Middlesex, and Mathews.

Detailed commuting patterns for this metropolitan area are presented in Map 5 and in Table 7. Map 5 shows that there is significant commuting between the localities comprising the SMSA, with the majority directed towards the cities of Williamsburg, Newport News, and Hampton. In addition to being the

Map 4.
Commuting Patterns,
Petersburg - Colonial Heights - Hopewell SMSA



Map 5.
Commuting Patterns, Newport News - Hampton SMSA

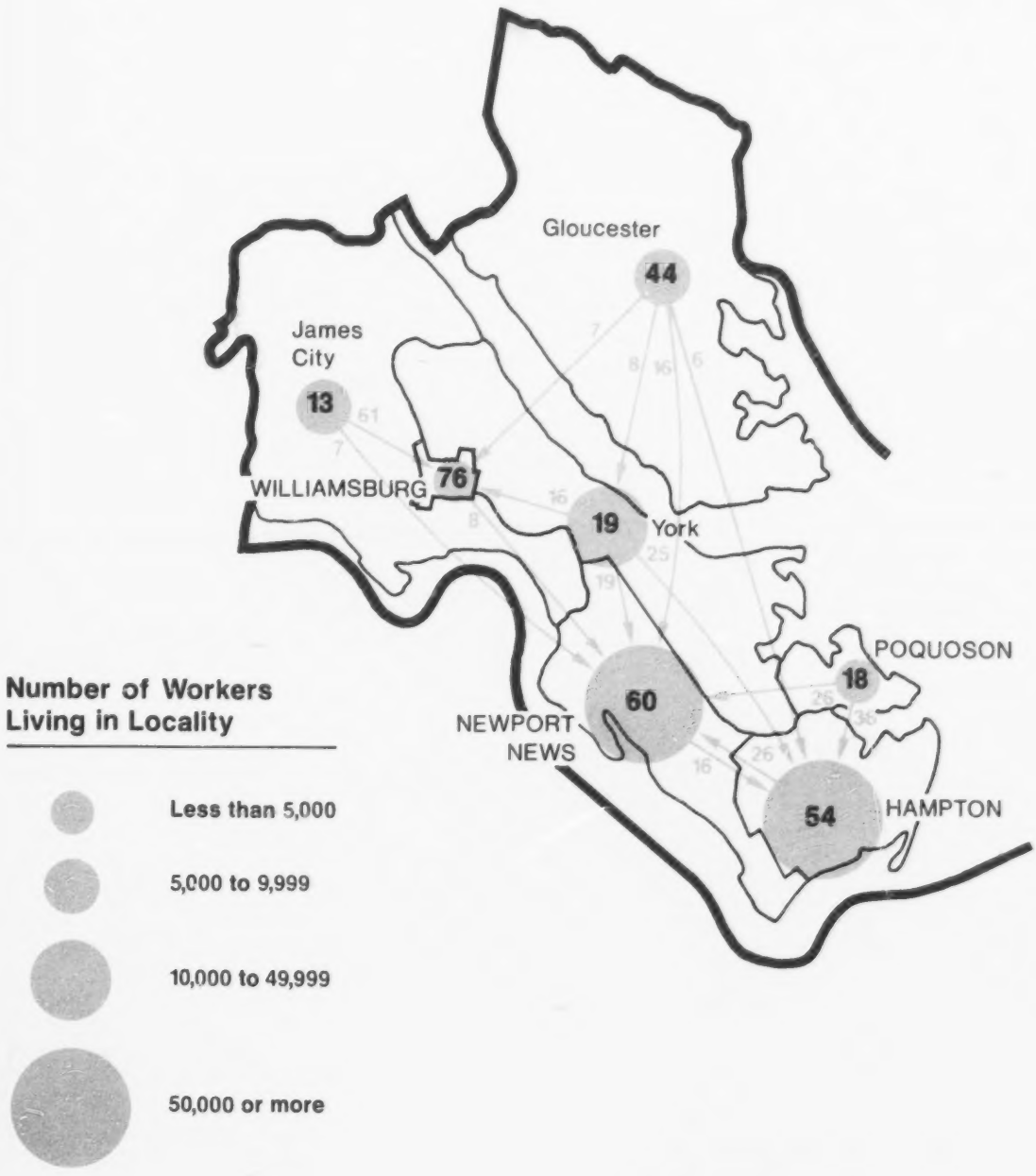


Table 7. Commuting Patterns In The Newport News-Hampton SMSA

Live In	Work In						
	Gloucester	James City	York	Hampton	Newport News	Poquoson	Williamsburg
Gloucester	3,689	161	684	506	1,291	35	547
James City	-	1,237	258	192	660	-	6,074
York	115	446	3,053	4,140	3,084	91	2,663
Hampton	10	34	650	30,026	14,479	65	699
Newport News	192	195	1,990	10,595	39,899	99	3,271
Poquoson	-	-	98	1,471	1,062	740	44
Williamsburg	-	170	28	79	350	-	3,287

destination for most commuters in the area, these three cities have the highest retention rates in the metropolitan area. Williamsburg City, for example, retains three-fourths of its working residents, Newport News retains 60 percent, and Hampton 54.4 percent.

There are three numerically large commuting flows in the area, two of which involve Hampton and Newport News. Hampton City attracts 11,000 workers from Newport News City, which in turn attracts 14,500 workers from Hampton. The third major flow is from James City County to Williamsburg City, and involves 6,000 workers. Less significant commuting flows include exchanges between Gloucester and Newport News, York and Hampton, York and Newport News, York and Williamsburg, Newport News and Williamsburg, Poquoson and Hampton, and Newport News and Poquoson.

The Newport News-Hampton SMSA comprises the state's fourth largest labor market. It retains 83.9 percent of its own workers, above the average figure of 77.2 percent for all areas in Virginia. Basic employment generators within the SMSA include shipbuilding and related industries, as well as several large military installations. The metropolitan area attracts significant numbers of workers from the jurisdictions outside its borders. These workers, as well as those within the SMSA, primarily commute to Hampton, Newport News, and Williamsburg.

Norfolk-Virginia Beach-Portsmouth SMSA

The Norfolk-Virginia Beach-Portsmouth SMSA is made up of the cities of Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach, as well as Currituck County in North Carolina (5). It is the second largest labor market in the state with 366,621 working residents. This metropolitan area has a well-developed and diversified manufacturing sector with significant employment in a variety of manufacturing specialities. The largest manufacturing sectors are shipbuilding and the production of radios and television sets. Other large industrial firms in the area produce confectionery products, food preparations, industrial inorganic chemicles, motor vehicles and car bodies, non-electrical meachinery, structural metal products, and hardwood veneer and plywood. There is also significant employment in newspaper printing and the production of bottled and canned soft drinks.

There are a large number of institutional employers in the SMSA, with an especially heavy concentration of military bases. These include the Norfolk Naval Station and Camp Elmore-Norfolk; the Norfolk Naval Shipyard in Portsmouth; the Little Creek Naval Base, Fort Story, Dam Neck, and the Ocrana Naval Air Station, all located in Virginia Beach. Other institutions include the Southeastern Virginia Training Center and St. Brides Correctional Center in Chesapeake, Norfolk State University and Old Dominion University in Norfolk, and Virginia Wesleyan College in Virginia Beach.

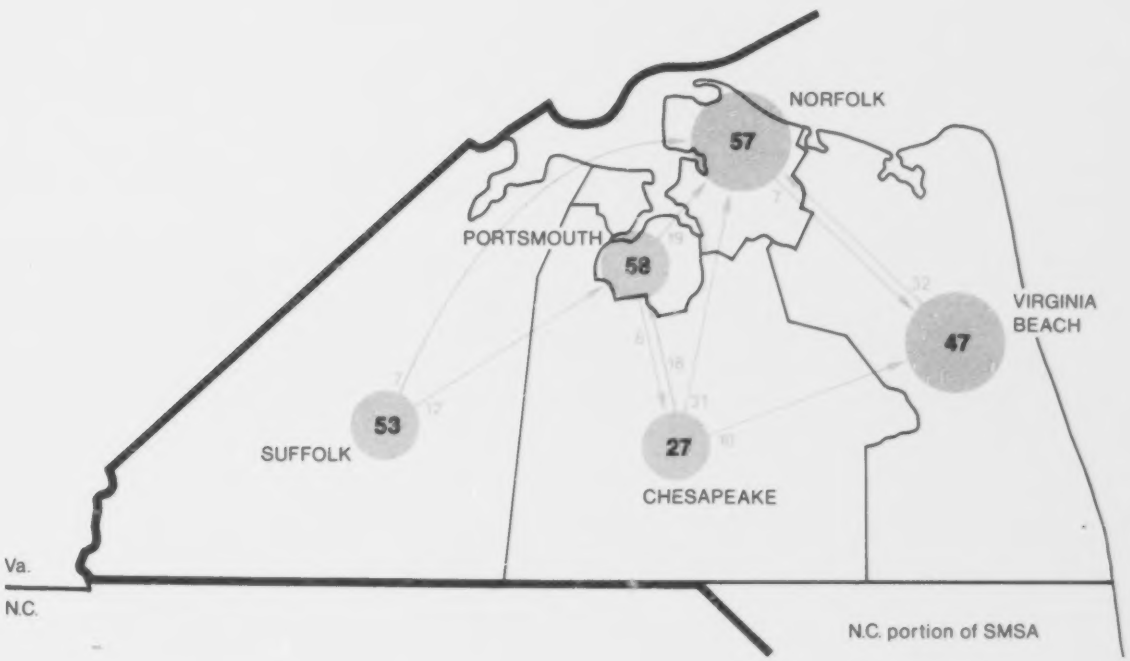
The SMSA provides employment for 80.2 percent of its working residents and attracts about 11,000 commuters from Isle of Wight County and the Newport News-Hampton SMSA. Commuting between the Newport News-Hampton and Norfolk-Virginia Beach-Portsmouth SMSAs is widespread (given the few transportation routes between the two SMSAs), with about 3.2 percent of the Newport News-Hampton SMSA's labor force traveling to the Norfolk-Virginia Beach-Portsmouth metropolitan area, and about 2.1 percent of the latter's work force commuting to the Newport News-Hampton area.

Detailed commuting data for the SMSA is presented in Map 6 and Table 8. Map 6 shows that of the five localities in the SMSA, Portsmouth, Norfolk, and Suffolk have the highest retention rates, between 50 and 60 percent, followed by Virginia Beach at 47 percent and Chesapeake at 27 percent. The strong influence of Norfolk is also evident from this map. Employment opportunities in Norfolk attract workers from each of the other four localities in the SMSA, and especially high proportions from Chesapeake and Virginia Beach. The data in Table 3 show that Norfolk supplies about 16,500 jobs in excess of those needed by its own residents, while neither Chesapeake nor Virginia Beach provide excess employment.

Portsmouth City, like Norfolk, creates more jobs than can be filled by its residents. Portsmouth attracts large numbers of workers from Suffolk and Chesapeake, but less than 5 percent of the work force from either Norfolk or Virginia Beach.

Table 8 shows the existence of several large commuting flows within the SMSA. In-commuting to Norfolk from Chesapeake, from Portsmouth, and from Virginia Beach; to Portsmouth from Chesapeake, and to Virginia Beach from

Map 6.
Commuting Patterns, Norfolk - Virginia Beach - Portsmouth SMSA



Number of Workers Living in Locality

- Less than 5,000
- 5,000 to 9,999
- 10,000 to 49,999
- 50,000 or more

Table 8. Commuting Patterns In The Norfolk-Virginia Beach-Portsmouth SMSA (Virginia Portion)

Live In	Work In				
	Chesapeake	Norfolk	Portsmouth	Suffolk	Virginia Beach
Chesapeake	13,404	15,266	8,849	705	4,843
Norfolk	2,415	73,478	4,041	213	8,762
Portsmouth	2,336	7,755	23,939	1,216	1,156
Suffolk	416	1,286	2,432	10,302	263
Virginia Beach	4,348	41,499	4,155	362	60,473

Norfolk comprise the largest of these. There are an additional ten pairs of commuting flows of between 1,000 and 5,000 workers each.

The Norfolk-Virginia Beach-Portsmouth SMSA contains the state's second largest labor force. It retains 80.2 percent of its workers locally, just slightly above average. Employment is generated by a diversified manufacturing base specializing in shipbuilding and small appliances. Intra-SMSA commuting flows are complex, with most localities exchanging commuters with each other. Particularly large streams of workers within the SMSA commute to Norfolk.

Eastern Shore

Manufacturing enterprises in the Eastern Shore include several large poultry dressing plants, as well as firms engaged in the production of packaged seafood, canned fruits and vegetables, men's and women's clothing, and concrete products.

The two counties on the Eastern Shore, Accomack and Northampton, are both geographically and economically independent of the rest of the state. Both counties retain approximately three-fourths of their own workers. About 6 percent of Accomack's labor force commutes to Northampton, and approximately 11 percent of Northampton's work force commutes to Accomack. Of the remaining workers, fewer than 5 percent commute to any other single jurisdiction.

Tidewater between Norfolk-Virginia Beach-Portsmouth and Petersburg-Colonial Heights-Hopewell

This area consists of the counties of Isle of Wight, Southampton, Surry, and Sussex, together with Franklin City. Although many of its workers are employed in the neighboring SMSAs, there are also local manufacturing firms providing significant numbers of jobs. These include several meat packing plants, a paper mill, sawmills and the related production of lumber and wood products, as well as a number of plants engaged in the production of fabrics, chemical preparations, and construction machinery. The only large institutional employers in the area are the Southampton and Deerfield Correctional Centers in Southampton County, which together employ around 400 workers.

These five localities are remarkably uniform in the proportion of their working residents retained, each being between 42 and 49 percent. For the entire area the worker retention rate is 72 percent, which is slightly below average. Out-commuting from this group of localities is directed towards the three surrounding metropolitan areas. Both Surry and Isle of Wight send large numbers of workers to the Newport News-Hampton SMSA. Workers in Surry and Sussex travel to the Petersburg-Colonial Heights-Hopewell SMSA, and Isle of Wight sends 16 percent of its labor force to the Norfolk-Virginia Beach-Portsmouth SMSA.

Emporia-Greensville

Most manufacturing in the Emporia-Greensville area is related to the fabrication of lumber and wood products, including prefabricated wood buildings, wood containers, and plywood. There is also some production of bakery and textile mill products.

Emporia City and Greensville County comprise a city-county area that is nearly independent from surrounding localities. Emporia retains about two-thirds of its resident workers, and 7 percent commute to jobs in Greensville County. Greensville retains a very low 16 percent of its labor force, but over half commute to Emporia. Taken as a whole, the area retains 81 percent of its workers, above the statewide average. There is only insignificant commuting with the surrounding counties of Brunswick, Sussex, and Southampton, as shown in Map 1.

Northern Piedmont between the Washington, D.C. SMSA and the Blue Ridge

This six-county area includes Fauquier, Rappahannock, Culpeper, Madison, Orange, and Louisa. The area is heavily specialized in the production of clothing. There is one warp knit fabric mill and many firms producing women's outerwear, men's work clothes, and children's dresses. Other important local manufacturing involves the production of paper bags, steel wire and related products, motor vehicle parts and accessories, and commercial printing. The only institution in this area is Vint Hill Farms Station, a small military base in Fauquier County.

The localities comprising this region show a fairly large range in their proportions of locally employed workers. Louisa County has the lowest retention rate at 40 percent, and is farthest from the geographic center of the group. Culpeper County has the highest retention rate, 69 percent, and is the central county in the group. Considering all six counties together, the worker retention rate is 68.5 percent, well below the average for all areas in this study.

A large proportion of the labor force in each of these counties commutes to a neighboring metropolitan area. Louisa County workers commute in large numbers to both the Richmond and Charlottesville SMSAs, and both Orange and Madison send about 10 percent of their working residents to the Charlottesville area. The three remaining counties, Culpeper, Rappahannock, and Fauquier, are influenced by the Washington area, with about a third of Fauquier's and 10 percent of Culpeper's and Rappahannock's labor forces commuting to Northern Virginia.

This is a moderately self-contained area, but one in which individual localities are strongly influenced by the presence of Washington, D.C. to the northeast and the Charlottesville SMSA to the southwest. In many ways this area is similar to the Fredericksburg area. Both have labor forces of about 50,000, nearly equivalent worker retention rates, and significant commuting ties to Northern Virginia.

Charlottesville SMSA and Nelson County

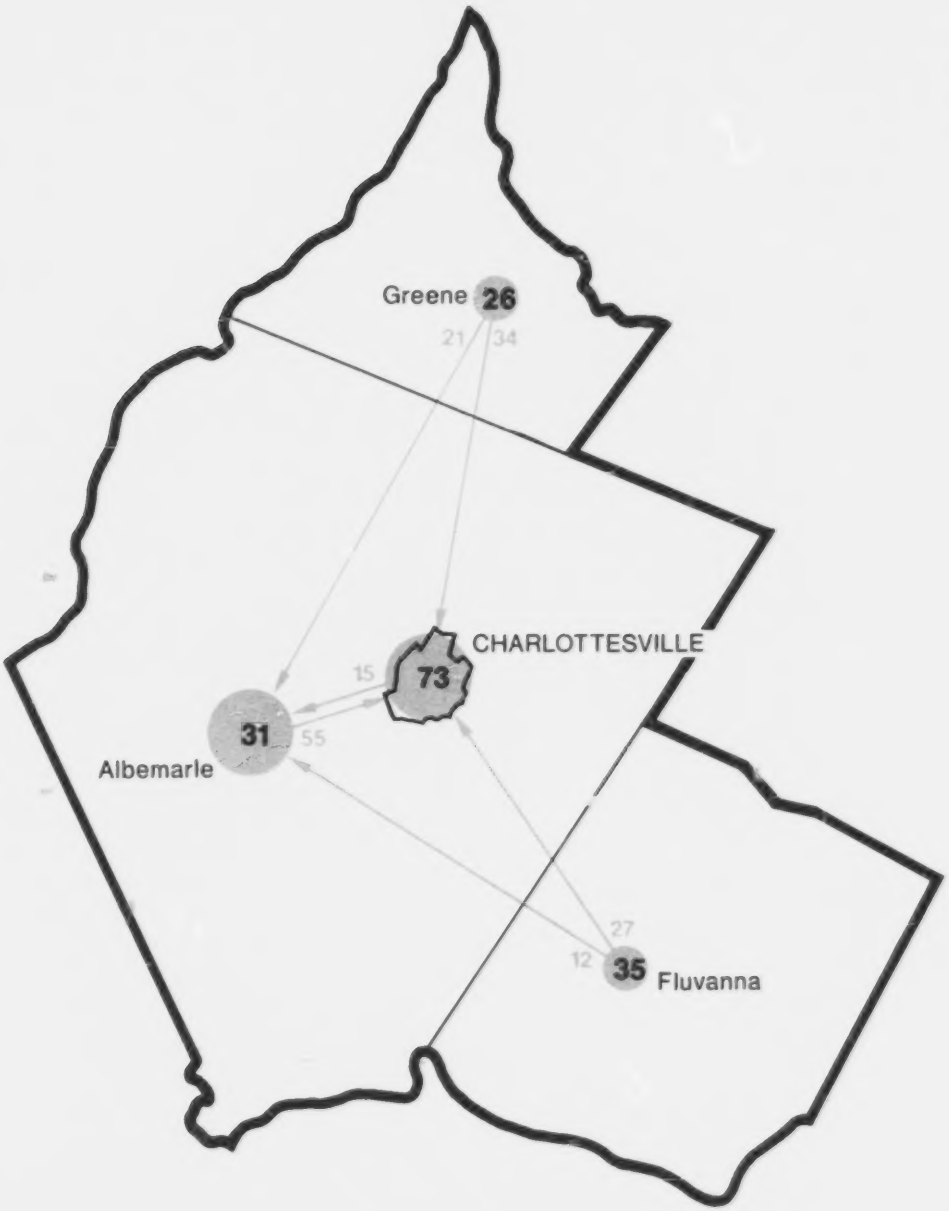
The Charlottesville metropolitan area consists of the counties of Albemarle, Fluvanna, and Greene, together with Charlottesville City. With a resident work force of 54,125 it is one of the smallest metropolitan labor markets in the state--only Danville and the Virginia portion of the Johnson City-Kingsport-Bristol SMSA are smaller.

Major employers in the Charlottesville area include the University of Virginia, which employs over 5,000, and several large electronics manufacturing firms. These firms produce electric switchgear and switchboard apparatus, engineering and scientific instruments, electric industrial controls, and electronic components. In addition several large firms produce frozen foods, tire cord and fabric, and metal office furniture.

The Charlottesville SMSA has the second highest worker retention rate in the state at 86 percent, and has net in-commuting of approximately 3,600. The SMSA attracts workers from Madison, Orange, and Louisa to the northeast and from Waynesboro, Nelson, and Buckingham to the south and west.

Intra-SMSA commuting patterns are detailed in Map 7 and in Table 9. These patterns are quite straightforward. The SMSA's three counties send large proportions of their working residents to Charlottesville, which in turn sends 15 percent of its labor force to Albemarle County (where the University of Virginia is located). A second pattern involves workers in the two outlying counties, Fluvanna and Greene, commuting to Albemarle County. Table 9 shows one large commuting flow in the SMSA, the 14,500 workers commuting from Albemarle to

Map 7.
Commuting Patterns, Charlottesville SMSA



Number of Workers Living in Locality

Less than 5,000	5,000 to 9,999	10,000 to 49,999	50,000 or more

Table 9. Commuting Patterns In The Charlottesville SMSA

Live In	Work In			
	Albemarle	Fluvanna	Greene	Charlottesville
Albemarle	8,124	95	19	14,545
Fluvanna	551	1,585	14	1,351
Greene	768	-	932	1,214
Charlottes-ville	2,885	59	19	14,388

Charlottesville. There are several smaller flows directed towards Charlottesville from Fluvanna and Greene, plus approximately 2,900 workers commuting from Charlottesville to Albemarle County.

The Charlottesville SMSA constitutes one of the state's smaller metropolitan labor forces with just over 50,000 workers. The worker retention rate for the area is very high, 93.3 percent (this includes Nelson County, which is not officially part of the SMSA). The high worker retention rate is due to the lack of any significant competition for the area's labor force, as well as the area's strong manufacturing sector and employment at the University of Virginia. The SMSA attracts commuters from several neighboring localities, and most intra-SMSA commuting is directed towards Charlottesville City.

Lynchburg SMSA

The Lynchburg SMSA consists of Amherst, Appomattox (6) and Campbell Counties, together with Lynchburg City. The most important industries in the Lynchburg SMSA produce industrial tools and clothing. The area has one large synthetic fiber weaving mill and numerous smaller firms producing clothing for men, women, and children. There are two large iron foundries, and other firms producing a wide range of manufactured products such as industrial machinery, motors and generators, motor vehicle parts and accessories, fabricated structural metal, conveyors and conveying equipment, power transmission equipment, refrigeration and heating equipment, electrical transformers, electric capacitors, storage batteries, and radio and television communication equipment.

The largest institutional employers in the Lynchburg SMSA are located in Amherst County and Lynchburg City. Amherst County is the site of Sweetbriar College and the Lynchburg Training School and Hospital, which together employ over 2,700 workers. Lynchburg City is the home of Liberty Baptist College, Lynchburg College, and Randolph Macon Women's College, which together add nearly 1,000 jobs to the local economy.

The metropolitan area has a labor force of 67,399 and attracts an additional 9,500 workers from the surrounding counties. The SMSA most heavily influences the localities to the west and east. As Map 1 shows, in-commuting to the Lynchburg SMSA is heavest from Bedford County (24 percent of its labor force.) Smaller proportions of workers are attracted from Bedford City, the Danville SMSA, Halifax, Charlotte, and Nelson counties. In addition to attracting more workers than it sends to neighboring localities (a net inflow of 6,700, the highest of any metropolitan area in the state), the Lynchburg SMSA retains a higher proportion of its working residents than any other SMSA in Virginia.

Map 8 diagrams the commuting flows within the Lynchburg metropolitan area, and Table 10 supplies detailed information on the number of workers commuting between its constituent localities. The map shows a very simple commuting pattern; each of the three counties in the SMSA send large numbers of workers to Lynchburg City, but there is only minimal commuting between the counties or from the city to the counties. As might be expected from this type of commuting pattern, Lynchburg City is the only one of the four localities in the SMSA with an excess of employment opportunities (17,500); none of the three surrounding counties provide sufficient jobs for all of their working residents.

Table 10. Commuting Patterns In The Lynchburg SMSA

Live In	Work In			
	Amherst	Appomattox	Campbell	Lynchburg
Amherst	4,997	38	193	5,730
Appomattox	68	2,923	40	1,545
Campbell	442	120	6,311	11,327
Lynchburg	1,185	64	480	24,317

Map 8.
Commuting Patterns, Lynchburg SMSA

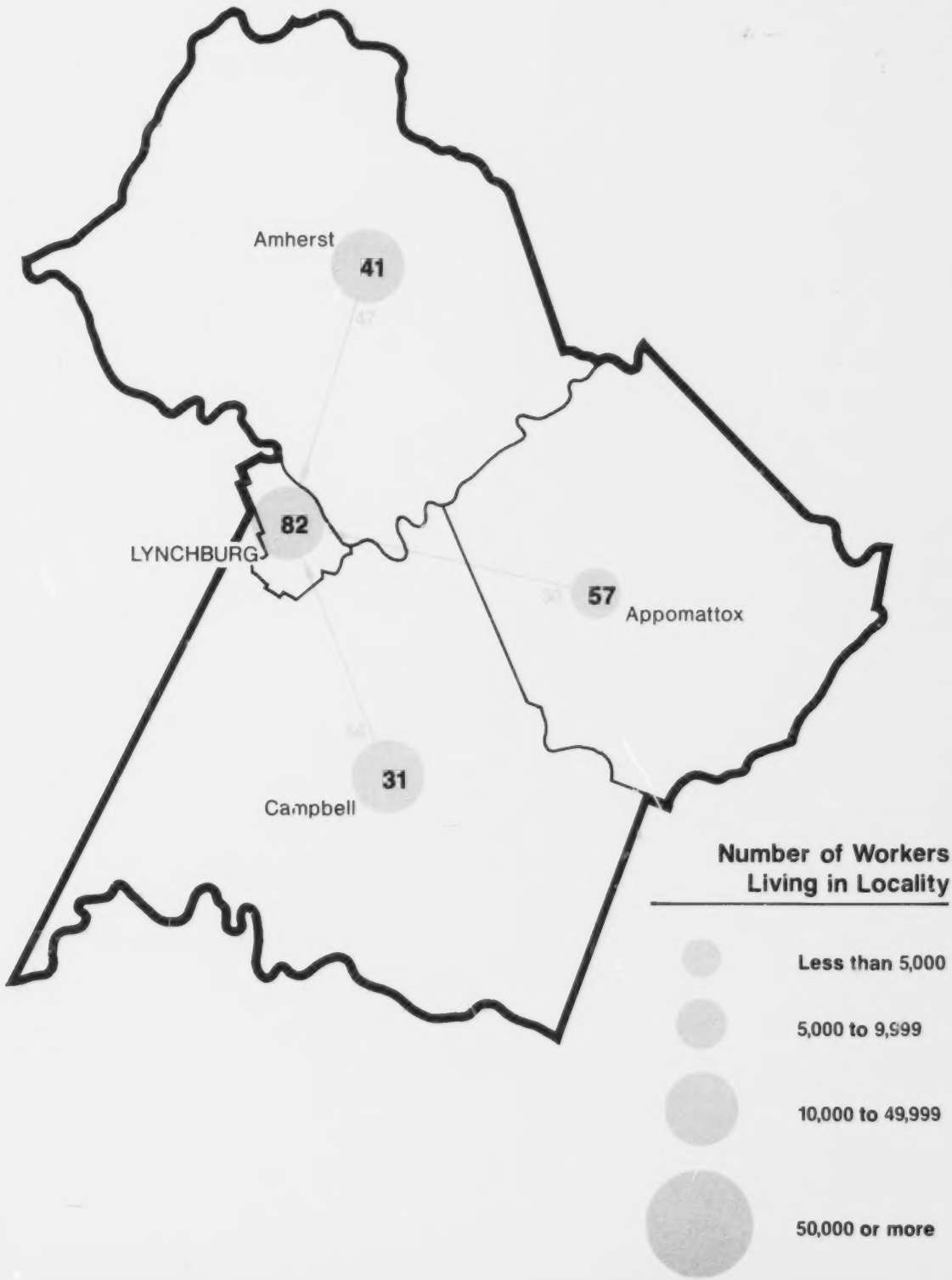


Table 10 shows two large commuting streams within the SMSA, both directed towards Lynchburg City. The largest flow is from Campbell County and the smaller is from Amherst County. Two smaller commuting flows exist, one from Appomattox County to Lynchburg, and the second from the city to Amherst County.

To summarize, the Lynchburg SMSA is a medium size metropolitan area (seventh largest area in the state) with a fairly high worker retention rate, 88.7 percent. A mature manufacturing sector with a heavy emphasis in textile and machinery production provides employment for the area's workers. The SMSA attracts a substantial number of workers from neighboring localities, particularly those lying to the east and west. Intra-SMSA commuting flows are straightforward; they are all directed towards Lynchburg City.

The Southern Piedmont East of Danville and Lynchburg

This large, predominately rural area consists of ten counties and one small city. Included within this area are South Boston City and the counties of Halifax, Mecklenburg, Brunswick, Charlotte, Lunenburg, Prince Edward, Nottoway, Amelia, Cumberland, and Buckingham. The area contains a total labor force of over 66,000 workers. However, it would be incorrect to think of the entire area as a single labor market, since most of its constituent jurisdictions have high worker retention rates and only limited out-commuting. We have elected to group these localities together as a matter of convenience, and because their economies are similar. The overall worker retention rate for these 11 jurisdictions, considered as an aggregate, is only 47 percent, the lowest of any area analyzed in this report.

Manufacturing in this portion of the Southern Piedmont is strongly concentrated in two areas. The first is textiles, with several mills producing synthetic fabrics, yarn, cotton, floor coverings, and narrow fabric. In addition to the mills are several companies producing a wide range of clothing for men, women, and children. The second major manufacturing area is men's and women's footwear.

There are several colleges and one large correctional center in this area. Longwood College and Hampden Sydney College are located in Prince Edward County. St. Paul's College is in Brunswick County, and Mecklenburg County is the site of the Mecklenburg Correctional Center. In the aggregate these institutions provide over 1,000 jobs to the local economy.

Map 1 shows that several of these localities have high worker retention rates. Mecklenburg County retains 78 percent of its work force, Prince Edward 71 percent, and Nottoway, Lunenburg, and South Boston City retain 68 percent. Lower rates are found in a number of other counties in the area. Buckingham has substantial out-commuting to the Charlottesville SMSA and some additional commuting to Prince Edward County. Cumberland has a very low retention rate; less than a third of its resident workers are locally employed. A large proportion, over a fourth, commute to Prince Edward County, and another quarter are employed in the Richmond SMSA. Amelia also has a low worker retention rate, 45 percent, and about a fourth of its workers commute to the Richmond metropolitan area. A much smaller proportion of its work force commutes to Nottoway County.

Halifax County and South Boston City form a small, relatively self-contained sub-area within the Southern Piedmont. South Boston City retains over two-thirds of its own workers, while a fifth commute to Halifax. Halifax County retains nearly 40 percent of its workers, and nearly a third commute to South Boston City.

Both Prince Edward and Mecklenburg Counties attract in-commuters from their neighboring counties. Prince Edward attracts workers from both Buckingham and Cumberland, while Mecklenburg attracts workers from Charlotte and Brunswick.

As we have seen, the industrial base in this part of the Southern Piedmont is concentrated in textile and footware manufacture. There are also a few institutions with moderate employment levels. The jurisdictions making up this area show considerable variation in the proportion of their work force locally employed. Some localities retain nearly 80 percent of their workers, while others employ less than a third.

Danville SMSA

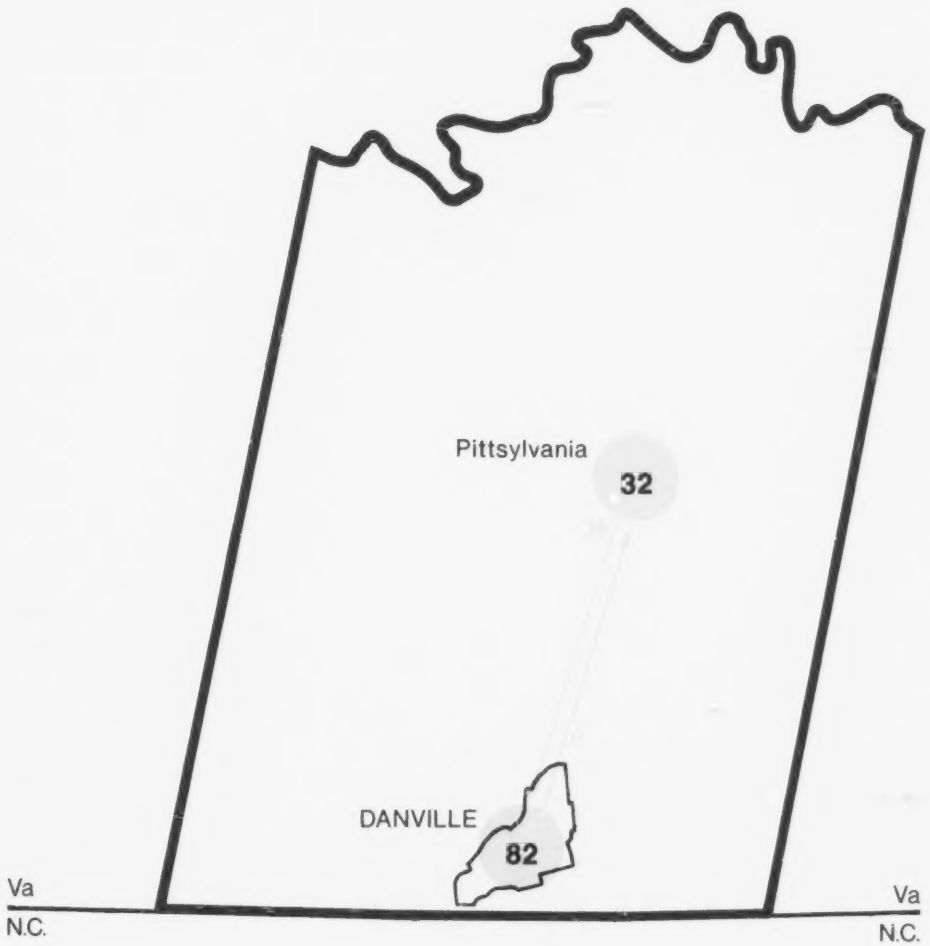
Manufacturing in the Danville SMSA is concentrated in the areas of textiles (there is a large weaving mill, a knitting mill, and a finishing plant), men's clothing, and tobacco stemming and redrying. There are also several large plants producing tires and inner tubes, pressed and blown glass, and lawn and garden equipment. There is only one institution in the area, Averett College in Danville.

The Danville SMSA is one of the smallest metropolitan areas in Virginia, with a total of just 49,658 working residents. This SMSA, which includes Pittsylvania County and Danville City, retains 77.7 percent of its working residents and attracts about 3,200 in-commuters from neighboring localities. Danville City creates about 10,000 excess jobs, but Pittsylvania County lacks about 18,000. About 8 percent of Pittsylvania County's work force commutes to Campbell County, while another 4 percent commutes to Martinsville City.

Table 11. Commuting Patterns In The Danville SMSA

Live In	Work In	
	Pittsylvania	Danville
Pittsylvania	9,465	11,256
Danville	1,237	16,605

Map 9.
Commuting Patterns, Danville SMSA



Number of Workers Living in Locality

Less than 5,000 | 5,000 to 9,999 | 10,000 to 49,999 | 50,000 or more

Map 9 and Table 11 detail commuting patterns within the SMSA. Danville City retains 82 percent of its working residents, and 6 percent commute to jobs in Pittsylvania County. The county retains about a third of its working residents, with about 40 percent commuting to jobs in Danville. The major commuting flow is thus from Pittsylvania to Danville, and involves some 11,300 workers; less than 1,500 workers commute from the city to the county.

Martinsville-Henry and Patrick

Manufacturing in this area is concentrated in textile production, the clothing industry, wood products, and the production of organic fibers. The area contains several cotton weaving mills, knitting mills, a narrow fabric mill, and a textile finishing plant. Several firms engage in the production of men's and boys' clothing. Companies producing household furniture employ a large number of workers, and there are several smaller firms making hardwood veneer, plywood, particleboard, and prefabricated wood buildings.

This three-locality area contains a labor force of 43,400 working residents and retains 88.7 percent of this number locally. Like the Greensville-Emporia area it is relatively independent from the rest of the state. Within the area, Martinsville City retains a little better than two-thirds of its working residents and provides an additional 12,400 jobs to workers in Patrick and Henry. Henry County provides employment to a little less than half of its working residents; nearly as many commute to Martinsville. Patrick County retains about 55 percent of its own workers, with a fifth commuting to the Martinsville-Henry area.

Franklin County and Bedford

Franklin and Bedford Counties together with Bedford City comprise a small labor market (32,714) geographically located between three larger metropolitan areas--the Danville, Roanoke, and Lynchburg SMSAs. The Bedford City-County area manufacturing sector is divided into two major industries, textile manufacturing and wood products. The area has several weaving mills, a finishing plant, and a throwing and winding mill. Smaller firms produce an assortment of women's clothing. Wood products manufactured locally include a paperboard mill, millwork, household furniture, mobile homes, and prefabricated buildings. The only institution in the area is Ferrum College in Franklin County.

Worker retention rates for Bedford County and City (21 and 48 percent, respectively) are fairly low and there is significant out-commuting to the Roanoke and Lynchburg SMSAs. A fourth of Bedford County's work force commutes to the Roanoke SMSA, another quarter to the Lynchburg SMSA, and a fifth commutes to Bedford City. Bedford City has net in-commuting of about 2,500, but a large proportion of its residents commute to jobs in Bedford County, and lesser numbers commute to the Lynchburg SMSA.

Franklin County retains a higher proportion of its work force than either Bedford County or City (59 percent). About a fifth of its labor force commutes to jobs in the Roanoke SMSA, and smaller percentages commute to Martinsville City and Henry County.

With an aggregate labor force of less than 33,000 this tri-locality area forms one of the smallest labor markets in the state, ranking as the 17th largest area delineated in this study. Competition from the three nearby SMSAs produces a very low worker retention rate, 55 percent, the second lowest in the state.

The Valley of Virginia: Winchester through Rockbridge

Moving from north to south through the Shenandoah and Page Valleys, from Winchester through Rockbridge County, we find a series of counties that, with their associated cities, have relatively high retention rates. In the northern part of the area there is noticeable out-commuting to the Washington, D.C. SMSA. By and large though, most commuting in this area involves the movement of workers to nearby localities. This area contains several sub-areas centered around Winchester, Harrisonburg, Staunton and Waynesboro, and Lexington and Buena Vista.

The Winchester sub-area has a diversified manufacturing base that includes the production of preserved fruits and vegetables, plastic products, asbestos products, metal cans, phonograph records, and kitchen cabinets. Employment is particularly high in the areas of plastic products and preserved fruit and vegetables. Winchester is also the home of Shenandoah College and Conservatory of Music.

Winchester City and Frederick and Clarke Counties form a small labor market area of about 29,000 workers. Winchester City has the highest retention rate of the three localities and creates an excess of about 7,100 jobs over those needed by its working residents. A sizeable proportion of Winchester's labor force commutes to jobs in Frederick County, and less than 10 percent commute to Clarke. Frederick County has the lowest worker retention rate in the area at 28 percent, with nearly half of its workers commuting to Winchester. Clarke County retains 42 percent of its own labor force and has moderate commuting percentages to both Frederick and Winchester. Additionally, a moderate number of workers in Clarke commute to jobs in the Washington, D.C. SMSA.

Manufacturing in the three counties of Page, Shenandoah, and Warren is predominantly geared to producing men's and women's clothing, rayon industrial yarns, and motors and generators. There is also significant employment in several large poultry dressing plants.

Both Warren and Shenandoah Counties retain relatively high proportions of their own labor forces. Warren retains 60 percent of its own workers, while about 10 percent find employment in the Washington, D.C. SMSA. Warren does, however, attract commuters from neighboring Page and Rappahannock Counties, so that the net result is only moderate out-commuting. Shenandoah County, with a

labor force of 12,500, retains 71 percent within its own borders; although a large number of workers commute to other jurisdictions, no one locality receives as much as 5 percent of the total work force.

Page County has a total labor force of about 7,600 and net out-commuting of 1,800. About 60 percent of the labor force is locally employed; less than 10 percent commutes to the Washington, D.C. SMSA, to Warren County, and to Rockingham County.

In the Harrisonburg-Rockingham area the major commercial product is dressed poultry. Other important manufacturing firms in the area produce men's clothing, medicinal drugs, refrigeration and heating equipment, and structural metal products. There are three institutions in the area, Eastern Mennonite College and James Madison University in Harrisonburg, and Bridgewater College in Rockingham County.

Rockingham County and Harrisonburg City constitute a relatively self-contained grouping of two localities. With a total labor force of about 35,700, this is one of the larger nonmetropolitan labor markets in the state. Rockingham County employs about 40 percent of its own residents, and nearly as many commute to Harrisonburg. Harrisonburg City retains 70 percent of its resident workers and generates additional employment opportunities for another 9,300 workers. About 15 percent of Harrisonburg's labor force commutes to Rockingham County.

Augusta County and the cities of Staunton and Waynesboro form another self-contained set of Valley localities. This sub-area has a small but diversified manufacturing sector that includes the production of computing equipment, synthetic organic fibers, textile mill products, men's clothing, plastic products, cutlery, and refrigeration and heating equipment. There are two institutions in Augusta County and two in Staunton City. Augusta is the site of Western State Hospital and the Woodrow Wilson Institute. Staunton is the home of Mary Baldwin College and the Staunton Correctional Center.

These three jurisdictions have a combined labor force of 41,516. Waynesboro and Staunton Cities retain high proportions of their working residents, while Augusta County only retains about a third of its workers. A fifth of Augusta's workers commute to Staunton and a quarter commute to Waynesboro. Staunton City retains over 60 percent of its own working residents. Out-commuting from Staunton is directed to Augusta County and to Waynesboro. Waynesboro workers commute to Augusta and to the Charlottesville SMSA.

The tri-locality area of Rockbridge County, Lexington and Buena Vista cities comprise the last set of jurisdictions in the Valley. Primary economic generators in this area include employment at the Virginia Military Institute, Washington and Lee University, and Southern Seminary Junior College. In the manufacturing sector, the area has one large textile mill producing floor coverings. There are also numerous smaller firms manufacturing a variety of products, including fabricated rubber products, nonferrous wire, non-electrical heating equipment, truck and bus bodies, and mining machinery.

The three jurisdictions have a combined labor force of just 12,600 and each of the three localities is closely tied to the others through commuting. Rockbridge County retains 40 percent of its labor force; about 30 percent commute to Lexington and another 10 percent to Buena Vista. Buena Vista retains nearly 60 percent of its working residents; slightly less than a fifth commute to Rockbridge and 14 percent to Lexington. Lexington City retains 70 percent of its labor force and a small proportion commute to work in Rockbridge County.

In summary, basic employment generators vary from sub-area to sub-area. The localities around Winchester and Staunton have a diversified manufacturing base, the Lexington area emphasizes textile manufacturing, and the Harrisonburg area and Page, Shenandoah, and Warren Counties specialize in the production of dressed poultry products. In all but the northern end of the Valley commuting tends to be focussed around the independent cities, which attract commuters from a small number of surrounding counties. In the northern part of the Valley there is some long distance commuting to the Washington area.

Roanoke SMSA

In 1980 the Roanoke SMSA consisted of three counties, Botetourt, Craig (7), and Roanoke, and two cities, Roanoke and Salem. The Roanoke metropolitan area offers a variety of basic employment generators, including institutional employers, Hollins College, Roanoke College, the National Business College, and the Veterans Administration hospital. Local manufacturing tends to be concentrated in the areas of textile and primary metal production. The Roanoke SMSA is the location for a synthetic fiber weaving mill, a knit outerwear mill, a textile finishing plant, and several firms producing women's clothing. Industries related to primary metal production include a blast furnace and a gray iron foundry, hardware, hoists and cranes, fabricated structural metal products, and construction machinery. Other manufacturing sectors with large numbers of employees include firms producing radio and television communication equipment, industrial controls, wood household furniture, toilet preparations, and tires and inner tubes.

The total labor force in the SMSA is just under 100,000, making it the fifth largest metropolitan labor market in the state. About 85,800 were employed within the SMSA, producing a worker retention rate of 85.8 percent. The jurisdictions comprising the SMSA attracted about 10,500 in-commuters from neighboring localities, with especially high rates of in-commuting from Bedford, Franklin, and Floyd Counties. About 4,600 workers commuted to destinations outside the boundaries of the metropolitan area, resulting in net in-commuting of about 5,800. This ranks as the second highest net commuting figure for metropolitan areas in Virginia; only the Lynchburg SMSA had a higher total, at 6,700.

Map 10 shows the major commuting flows within the SMSA, and Table 12 presents the exact number of commuters in the area. Map 10 indicates the complexity and interdependence of the five jurisdictions in the metropolitan area. Most intra-SMSA commuting is directed towards the two independent cities. Salem and Roanoke Cities attract commuters from each other, as well as from each

Map 10.
Commuting Patterns, Roanoke SMSA

Table 12. Commuting Patterns In The Roanoke SMSA

Live In	Work In				
	Botetourt	Craig	Roanoke City	Roanoke County	Salem
Botetourt	3,428	12	752	3,268	762
Craig	14	618	126	281	305
Roanoke County	307	13	5,401	17,193	6,876
Roanoke City	500	-	3,292	27,308	5,447
Salem	25	13	710	3,669	5,489

of the three counties in the SMSA. Roanoke City attracts 24,400 in-commuters from the other localities in the SMSA, and Salem City attracts a total of 13,400 in-commuters. In both cases Roanoke County supplies the majority of commuters.

Craig and Botetourt Counties are similar in several respects. First, they have nearly identical worker retention rates, 37 and 34 percent, respectively. Second, neither county attracts significant proportions (over 5 percent) of in-commuters from any of the other localities in the SMSA.

Roanoke County is somewhat anomalous among the counties in the SMSA. On the one hand it has a very low woker retention rate (16 percent); most of its residents work in either Salem or Roanoke Cities. Despite this, Roanoke County attracts in-commuters from every other jurisdiction in the SMSA, including 6 percent of Salem's work force, and 8 percent of Roanoke City's.

Table 12 indicates the presence of several numerically large commuting flows in the SMSA. The three major flows of over 5,000 workers are directed towards the independent cities. Smaller commuting flows occur between Roanoke City and Roanoke County, Botetourt County and Roanoke City, and Salem City and Roanoke City.

The localities comprising the Roanoke metropolitan area display an unusually high degree of mutual dependence, as evidenced by their complex network of commuting flows. While a large proportion of all commuters within the SMSA travel to the two independent cities, there remains a smaller, but still significant residual that commutes to Roanoke County. The manufacturing base in the

Roanoke SMSA is heavily concentrated in the fields of textile and primary metal production. The area not only retains a large proportion of its own workers, 85.8 percent, but also attracts a sizeable number of workers from outside its boundaries.

Alleghany-Covington-Clifton Forge Area

This area includes Covington and Clifton Forge Cities, and Alleghany, Bath, and Highland Counties. Alleghany, Covington, and Clifton Forge constitute a small, self-contained sub-area of about 11,000 workers, while Highland and Bath are nearly independent. This area has three main employers, a paperboard mill, a plant producing organic fibers, and the VEPCO plant construction in Bath. Secondary industries produce inorganic chemicles, women's clothing, and fabricated rubber products.

Covington City is the major employment center in the area. It employs three-fourths of its own workers and provides employment for over half of Alleghany County's labor force. In addition, nearly 20 percent of the Clifton Forge labor force commutes to jobs in Covington. Clifton Forge City provides employment for half of its resident workers. Commuters to Clifton Forge come from Alleghany and Bath, and out-commuters travel to Alleghany, Bath, and Covington. Alleghany County employs less than 20 percent of its own workers, the majority commuting to Covington and a small number commuting to Clifton Forge.

Bath County retains nearly 80 percent of its own work force and attracts in-commuters from Clifton Forge City and from Highland County. Highland County, with the smallest labor force of any Virginia jurisdiction, retained 60 percent of its own workers, and, as previously mentioned, over a fourth found employment in Bath County.

Southwest Virginia: Radford City to Smyth County

The localities lying along this portion of Interstate 81 are similar in having moderately high worker retention rates and limited commuting. The single exception is the tri-locality area of Montgomery and Pulaski Counties and Radford City. These three localities have a combined labor force of about 46,000 and extensive commuting ties.

The Radford-Montgomery area is the location of Virginia Polytechnic Institute and State University, as well as Radford University. VPI&SU is a major employment center in the area (with employment of over 5,800). Its presence in Montgomery County is one reason for that jurisdiction's high worker retention rate. There are also several important manufacturing firms in the area, the largest being the Hercules explosives plant in Radford. The area also has a well-developed textile industry. Other industrial firms with significant employment include plants producing lighting equipment, radio and television communication equipment, motor vehicle parts and accessories, non-electrical machinery, motors and generators, and motor vehicles and car bodies.

Radford City retains nearly two-thirds of its own workers, and about 10 percent commute to work in Montgomery and in Pulaski. Pulaski County retains about the same proportion of its workers as Radford City. In addition, about 10 percent of its work force commutes to Montgomery, and nearly 20 percent to Radford City. Of the three localities, Montgomery County retains the highest proportion of its own workers, over three-fourths. Less than 10 percent commute to Radford, and a small proportion commute to the Roanoke SMSA.

Floyd County is located to the south of the tri-locality area. Its most important manufactured product is women's clothing. The county has a total labor force of nearly 5,000 workers, a little over half of whom work within its borders. Out-commuting is directed towards Montgomery County and the Roanoke SMSA.

Giles County, located to the northwest of Radford, retains two-thirds of its 7,000 member work force. Its major commuting link is to Montgomery County, where nearly 20 per cent of its labor force finds employment. Employment centers in Giles County include the Celanese plant, which produces man-made fibers, the National Gypsum Company plant, and the West Virginia Armature Company, producers of mining machinery and electrical locomotives.

Bland County has the lowest retention rate among the surrounding jurisdictions at just under 50 percent. Less than 10 percent of its nearly 2,400 workers commute to Tazewell County, and about the same proportion commute to Wythe County. A much larger proportion of its work force commutes to Bluefield City in West Virginia. Manufacturing firms in Bland County specialize in the production of electrical transformers and men's shirts. In addition, the Bland Correctional Center contributes 200 jobs to the local economy.

Wythe County, with a total labor force of 10,659, employs nearly three-fourths of its workers within its own boundaries. Another 10 percent of its labor force commutes to jobs in Pulaski County. Despite its small population, Wythe County has a diversified manufacturing sector that includes the production of electrical equipment, metalworking machinery, men's and women's shirts, and thermoplastic products.

Finally, Smyth County is an example of a self-contained area employing most if its workers in the local economy. With a total labor force of 13,248, 80 percent find employment within its own borders. About half of these work in Marion Town, the other half in the surrounding county. The only significant out-commuting is to the Virginia portion of the Johnson City-Kingsport-Bristol SMSA. Smyth County's manufacturing sector includes several large companies producing wood household furniture, communications equipment, sporting goods, and men's and women's clothing. There are two institutional employers in the area, the Marion Correctional Treatment Center and Southwestern State Hospital.

The entire Southwest region contains a labor force of 84,000 workers, sixth largest in the state. It retains 91 percent of its own workers within the eight locality area, well above the 77.2 percent statewide average. Its retention rate is just slightly below the 94 percent rate found in the Eastern Shore and the 93 percent rate for the Charlottesville SMSA area.

Carroll-Grayson-Galax

Carroll and Grayson Counties and Galax City form a relatively independent labor market area of about 21,300 workers. Manufacturing in the Galax area is concentrated in textile production and the associated industries producing men's and women's clothing. This area also contains manufacturing firms producing electronic capacitors, exercise and medical equipment, and household furniture. Carroll County is the site of the Southwestern Virginia Training Center, the only large institutional employer in the area. The Training Center employs around 800 workers.

As is typical of areas containing an independent city, the worker retention rate is higher in Galax City than in the surrounding counties. Grayson County provides employment for about half of its workers, Carroll County for only 40 percent, but Galax City employs 80 percent. Not unexpectedly, Galax is the only one of the three localities that creates an excess of jobs over those needed by its own workers, and most commuting within this area is directed towards Galax City. Both Carroll and Grayson send over a fourth of their workers to Galax, which sends 10 percent of its labor force to Carroll. Grayson and Carroll also have out-commuting to North Carolina, particularly to Mount Airy City in Surry County.

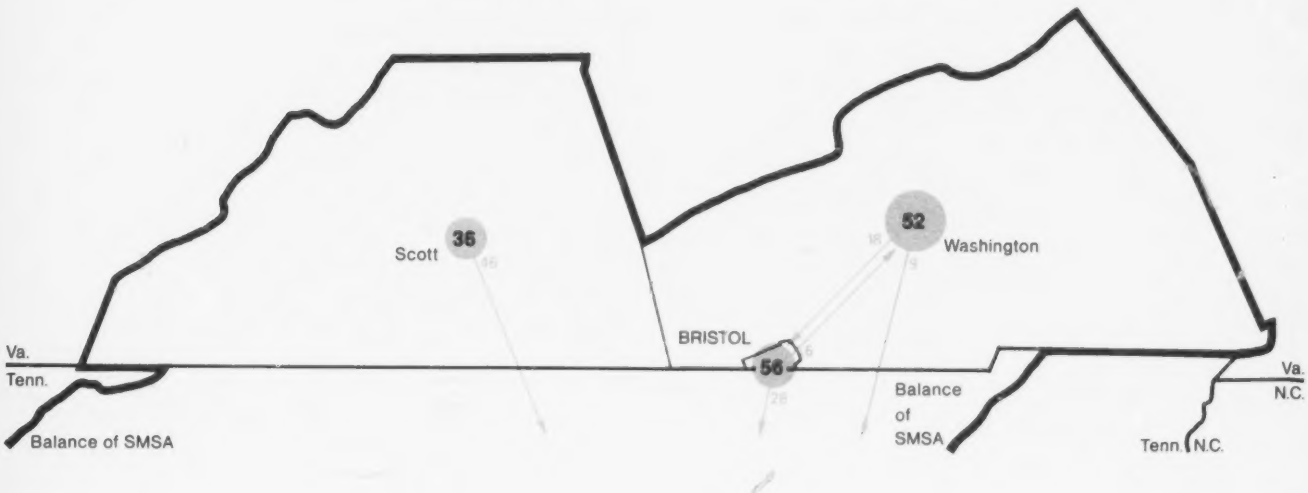
Bristol and Vicinity

Along with Scott and Washington Counties, Bristol City constitutes the Virginia portion of the Johnson City-Kingsport-Bristol SMSA. The area's main employers include Emory and Henry College, Virginia Intermount College, a Westinghouse Electric plant producing copper insulated magnet wire, and an Electrolux Corporation plant that makes vacuum cleaners. Smaller firms in the area produce a wide range of products, including fabricated metal, automotive wheel covers, hand and electric hoists, air and gas compressors, and electrical power equipment.

The Virginia portion of the SMSA has a total labor force of 33,854, the smallest among all metropolitan areas in the state. Despite significant differences in population size and in their economies, in some ways this area is similar to the Virginia portion of the Washington, D.C. SMSA. Both have very low worker retention rates, 60.7 percent in the Bristol area, 60.2 percent in Northern Virginia. They are also similar in that both have net out-commuting, the majority of which travels to the out-of-state balance of the SMSA. Of the 11,000 out-commuters from the Virginia portion of the Johnson City-Kingsport-Bristol SMSA, about 70 percent commute to the Tennessee portion of the SMSA. This is equal to over a fifth of the total work force in the Virginia portion of the SMSA.

Map 11 and Table 13 present detailed commuting data for the Virginia portion of the SMSA. Map 11 shows that while Scott County, for example, retains a third of its own workers, nearly half commute to Tennessee, mostly to Kingsport City. Bristol City provides employment for 60 percent of its workers, a small proportion commute to Washington County, and 30 percent commute to localities in

Map 11.
Commuting Patterns, Johnson City - Kingsport - Bristol SMSA



Number of Workers Living in Locality

- Less than 5,000
- 5,000 to 9,999
- 10,000 to 49,999
- 50,000 or more

Table 13. Commuting Patterns In The Johnson City-Kingsport-Bristol SMSA (Virginia Portion)

Live In	Work In		
	Scott	Washington	Bristol
Scott	2,761	26	86
Washington	10	9,471	3,349
Bristol	11	446	4,375

Tennessee, with the majority traveling to Bristol City, Tennessee. About half of the workers in Washington County find local employment, 20 percent commute to jobs in Bristol City, Virginia, and a small number commute to Bristol City, Tennessee.

Table 13 shows that the number of workers commuting between the localities comprising the Virginia portion of the SMSA is, in most cases, quite small. The only large stream of commuters is from Washington County to Bristol City.

Virginia's Far Southwest

The counties of Lee, Wise, Dickenson, Russell, Buchanan, and Tazewell, along with Norton City, form a rather strongly self-contained area in the southwest corner of Virginia. If all seven localities are considered as a single labor market the resultant labor force of 66,500 would rank as the state's eighth largest. In addition, the resulting worker retention rate would be 90.6 percent, the fourth highest in Virginia. Out-commuting proportions tend to be low and directed towards contiguous areas in Virginia, Tennessee, Kentucky, and West Virginia. This area is heavily dependent on coal mining, and most commuting represents workers traveling to jobs in the coal fields.

For the seven localities comprising this area mining employment averages 41 percent of the total labor force, the proportion in each locality varying from 7 percent in Norton to 69 percent in Buchanan County. There is also a limited amount of textile production from the manufacturing sector, and two local colleges, Clinch Valley and Bluefield, provide local employment opportunities.

Most jurisdictions in the area have high worker retention rates, ranging from 59 percent in Lee County to 84 percent in Buchanan. Commuting is generally directed towards Wise County (in-commuters from Lee, Russell, Dickenson, and Norton) and towards Buchanan County, which attracts in-commuters from Dickenson, Russell, and Tazewell.

SUMMARY

The late 19th and early 20th centuries witnessed a series of technological innovations--in communications, agriculture, transportation, and power generation--that promoted the industrial and commercial growth of the central city in the northern states. In the South, however, industrial site location did not favor the development of large metropolitan centers. In the southern states a more dispersed pattern developed, one that favored the growth of small towns and cities.

In Virginia these forces produced a mixed pattern of industrial growth. In the early 20th century the concentration of manufacturing firms in the state's largest cities was roughly equal to the concentration of population in these cities. Sixty years later, in 1980, these proportions were still nearly identical. The residential location of manufacturing employees, however, became less concentrated during this period, their dispersal paralleling the development and growth of the suburbs.

One result of these changes in industrial site location and transportation technology was the development of a less concentrated residential settlement pattern. The introduction of the automobile made it possible for the employed to live at a relatively great distance from the workplace. As more families purchased automobiles residences became more dispersed, roads were put in, and even more families decided to move away from the central city. Builders took advantage of the low cost of rural land to develope large tracts of affordable homes, and this provided an additional impetus for suburban homeownership. This process continued to the point that the automobile became a virtual necessity. By 1980 almost 90 percent of the state's 2.4 million workers commuted to work in an automobile. Not only has automobile usage increased rapidly in the last thirty years, but in addition the proportion of workers commuting across jurisdictional boundaries has also increased rapidly. In 1960 only 30 percent of all workers were employed outside their county of residence. By 1980 this had increased to 51 percent.

Where do these commuters go? Our review of commuting patterns in Virginia has disclosed many differences, and a few similarities, among the state's localities. Some of the more important differences include the size of each locality's labor force, the proportion of that labor force locally employed, and the balance of in- and out-commuters. At the same time, similarities exist between areas that, while far apart, nevertheless have very similar commuting relationships with their neighbors.

Differences in labor force size between Virginia localities are enormous. Fairfax County, with over 300,000 workers, stands at one end of a continuum that ends with Highland County and its 1,222 workers. There are also significant

differences in the proportion of workers living and working in the same locality. In 1980 the highest worker retention rate in the Commonwealth was found in Buchanan County, which retained nearly 84 percent of its resident workers. Manassas Park City had the lowest rate, providing employment for less than 5 percent of its working residents.

Because of these very large differences in labor force size and the equally large differences in worker retention rates, there are also significant differences between localities in net commuting--the difference between the number of in- and out-commuters. Fairfax County, a large residential suburb for workers commuting to Washington, D.C., stands at one extreme with about 124,000 more out- than in-commuters, and at the other extreme is Richmond City, with 87,000 more in- than out-commuters. Richmond is so economically dominant that it attracts workers from 38 different localities, while Northampton County, because of its geographic isolation from the rest of the state, attracts workers from only two counties, one in Virginia and one in Maryland.

Despite these important differences it is still possible to identify some typical commuting patterns. Some cities, for example, retain a high proportion of their own working population and also serve as a magnet to attract workers from neighboring localities. Included in this group are Charlottesville, Danville, Harrisonburg, Lynchburg, Martinsville, Richmond, Roanoke, and Williamsburg. These areas are similar in having strong economic generators, and in being easily accessible by highway. In several cases, they are quite far from other large cities. In other cases, such as Richmond, Roanoke, and Williamsburg, they do face competition from other cities, but for a variety of reasons (economic dominance, a specialized labor force) still attract considerable numbers of workers.

A second group of urban areas with similar commuting characteristics are found in the valley regions from Winchester to Bristol (excluding the Roanoke metropolitan area). These cities are of moderate size and relatively close to one another, so that each has a limited sphere of influence. In many cases commuting is limited to the surrounding county area.

A large number of jurisdictions fall into a third group where there is little in- or out-commuting to adjoining localities. Included in this group are most of the localities in the Northern Neck, the Southwest, and the Southern Piedmont from Buckingham County south to Halifax County and east to Southampton County.

Although many counties show strong work-residence ties to just one city, a fourth group of counties sends large numbers of commuters to more than one jurisdiction. These counties tend to be situated between strong economic areas, and, in addition, their own economies are relatively weak. Bedford County is one such example, with nearly a fourth of its workers commuting to the Lynchburg SMSA and just over a fourth commuting to the Roanoke SMSA. Other examples are Nelson County, located between the Charlottesville and Lynchburg SMSAs; Spotsylvania and Stafford counties between the Washington, D.C. SMSA and Fredericksburg City; Louisa County between the Charlottesville and Richmond SMSAs; and Isle of Wight County between the Newport News-Hampton and Norfolk-Virginia Beach-Portsmouth SMSAs.

Most of this commuting is heavily dependent on the automobile, and this fact has both positive and negative implications. On the negative side, heavy automobile usage leads to increased air pollution, morning and evening traffic jams, highway deterioration, and the allocation of scarce city building lots to parking structures. On the positive side, the automobile has made population deconcentration possible, which in turn has led to the development of the suburbs. To many families the suburbs offered an escape from the pressures of city life, a congenial environment, and the economic security of owning one's own home.

In this report we have noted several uses for commuting data. One such use is in the delineation of labor market areas. For example, commuting flows provide a measure of the economic dependency of one area on another, and are thus useful in determining the degree of economic integration between areas. Commuting data may also be used in the analysis of daytime population levels. The decennial census enumerates people at home, and even population estimates and projections are calculated in terms of where people live. In many instances, however, it is important to know the maximum population in an area during working hours, in order to make adequate provision for the necessary level of public services. The number of parking spaces a city needs, the amount of water used during the day, and daytime electricity usage are just some of the many factors that are determined more by the daytime population level than by the number of persons residing in the area.

We have seen that commuting is important for a number of reasons. From an analytical perspective commuting data can be used to investigate economic dependency, daytime population levels, and traffic flow patterns. From a social perspective, commuting helps preserve the population in Virginia's rural and suburban counties, and thus acts against the over-concentration of population in the state's urban areas. Commuting may also lead to the creation of cooperative ties between localities, as a consequence of area-wide planning for highway development and use. Commuting may, however, lead to jurisdictional conflicts between cities and their suburbs, as urban areas seek compensation from suburban commuters for the use of city facilities. As the number of interlocality commuters continues to increase, taxing commuters may become an important political issue.

NOTES

(1) Ford began to manufacture the Model T in 1909, and in that year about 124,000 were produced. By 1916 production was up to 1.5 million, and by 1925 production reached 3.6 million per year.

(2) SMSAs used throughout this report are those in existence at the time of the 1980 census. In 1983 changes were made to the composition of many of these areas, and MSA (Metropolitan Statistical Area) replaced SMSA as the official designation for these areas.

(3) Commuting data used in this study was originally collected in the 1980 decennial census. They were made available as a supplement to the technical documentation to Summary Tape File 4.

(4) Data on manufacturing employment is from the 1980 volume of County Business Patterns and the Virginia Industrial Directory published by the Virginia State Chamber of Commerce.

(5) Currituck County was subsequently deleted from the Norfolk-Virginia Beach-Newport News MSA in 1983.

(6) Appomattox County was subsequently deleted from the Lynchburg MSA in 1983.

(7) Craig County was subsequently deleted from the Roanoke MSA in 1983.

Appendices 1 and 2

Appendix 1 is a list of the number of in-commuters to each Virginia locality from neighboring jurisdictions in Virginia or in the surrounding states. The number in parantheses next to the destination locality equals the number of persons who both live and work in that locality. Underneath the locality is the list of jurisdictions supplying workers to the locality. The list is arranged in alphabetical order, beginning with counties in Virginia, then listing independent cities in Virginia, and then listing counties in other states.

Appendix 2 is a list of the number of out-commuters from each Virginia locality to neighboring towns, cities, and counties in Virginia and the border states. The top line of the list gives the locality name and the total number of workers residing in the locality. The next line repeats the locality name and gives the number of resident workers employed in the locality. This is the same number appearing on the first line in Appendix 1. The entries beneath each locality are not in alphabetical order, and are not limited to counties and cities. Also included as destinations are Central Business Districts (CBDs), towns, and Standard Metropolitan Statistical Areas (SMSAs).

Appendix 1. In-Commuting to Virginia Localities

ACCOMACK	(9,104)
Northampton	606
Somerset, MD.	125
Wicomico, MD.	103
Worcester, MD.	522

ALBEMARLE	(8,124)
Amherst	15
Augusta	200
Buckingham	339
Culpeper	31
Fluvanna	551
Greene	768
Louisa	182
Madison	183
Nelson	409
Orange	332
Page	35
Rockingham	98
Charlottesville	2,885
Harrisonburg	14
Lynchburg	18
Staunton	13
Waynesboro	276

ALLEGHANY	(924)
Bath	3
Bedford	29
Botetourt	122
Craig	14
Roanoke	53
Rockbridge	11
Clifton Forge	247
Covington	239
Roanoke	115
Salem	13
Greenbrier, WVA.	14
Monroe, WVA.	14

AMELIA	1,652)
Buckingham	9
Cumberland	12
Dinwiddie	19
Nottoway	191
Prince Edward	29
Petersburg	17

AMHERST	(4,997)
Albemarle	11
Appomattox	68
Bedford	94
Buckingham	13
Campbell	442
Halifax	21
Nelson	254
Rockbridge	48
Bedford	10
Buena Vista	22
Lynchburg	1,185

APPOMATTOX	(2,923)
Amherst	38
Buckingham	154
Campbell	120
Charlotte	122
Cumberland	14
Nelson	27
Prince Edward	162
Lynchburg	64

ARLINGTON	(27,507)
Caroline	19
Culpeper	88
Essex	17
Fairfax	36,399
Fauquier	255
Frederick	36
Loudoun	1,176
Prince William	6,697
Rappahannock	13
Spotsylvania	196
Stafford	549
Warren	22
Alexandria	8,573
Fairfax	903
Falls Church	695
Fredericksburg	45
Manassas	398
Manassas Park	167
Washington, D.C.	9,480
Calvert, MD.	90
Charles, MD.	782
Frederick, MD.	112
Montgomery, MD.	5,169
Prince George's, MD.	9,427
St. Mary's, MD.	60

AUGUSTA	(7,841)
Albemarle	31
Bath	38
Highland	20
Nelson	54
Page	45
Rockbridge	188
Rockingham	580
Buena Vista	11
Harrisonburg	137
Staunton	2,072
Waynesboro	568
Pendleton, WVA.	13

BATH	(2,097)
Alleghany	235
Augusta	114
Highland	340
Rockbridge	45
Buena Vista	16
Clifton Forge	112
Covington	144
Staunton	22
Greenbrier, WVA.	370
Nicholas, WVA.	12
Pendleton, WVA.	171
Pocahontas, WVA.	398
Webster, WVA.	9

BEDFORD	(3,044)
Amherst	30
Botetourt	92
Campbell	134
Franklin	27
Roanoke	39
Rockbridge	14
Bedford	503
Lynchburg	306
Roanoke	150

BLAND	(1,161)
Giles	72
Montgomery	17
Pulaski	16
Smyth	12
Tazewell	53
Wythe	66
Radford	5
Mercer, WVA.	60

Appendix 1, Continued

BOTETOURT	(3,428)
Alleghany	25
Bedford	143
Craig	14
Roanoke	307
Rockbridge	156
Bedford	10
Roanoke	500
Salem	25

BRUNSWICK	(3,750)
Dinwiddie	26
Greensville	118
Lunenburg	20
Mecklenburg	339
Nottoway	36
Colonial Heights	8
Danville	33

BUCHANAN	(9,418)
Dickenson	542
Russell	1,170
Smyth	72
Tazewell	1,860
Wise	11
McDowell, WVA.	473
Mingo, WVA.	27
Floyd, KY.	27
Pike, KY.	399

BUCKINGHAM	(2,103)
Albemarle	43
Amherst	19
Appomattox	9
Charlotte	29
Cumberland	67
Prince Edward	44

CAMPBELL	(6,311)
Amherst	193
Appomattox	40
Bedford	450
Buckingham	12
Charlotte	266
Cumberland	12
Franklin	6
Halifax	868

CAMPBELL, Continued	
Nelson	24
Pittsylvania	2,485
Prince Edward	25
Rockbridge	4
Charlottesville	14
Danville	8
Lynchburg	480

CAROLINE	(2,509)
Essex	105
King and Queen	82
King George	66
King William	24
Louisa	25
Northumberland	15
Spotsylvania	141
Stafford	23
Westmoreland	14
Fredericksburg	40

CARROLL	(4,898)
Floyd	103
Giles	11
Grayson	163
Patrick	64
Pulaski	40
Wythe	165
Galax	271
Radford	6
Alleghaney, NC.	17
Surry, NC.	25

CHARLES CITY	(563)
Henrico	85
New Kent	9
Sussex	16
Richmond	23

CHARLOTTE	(2,618)
Appomattox	28
Campbell	4
Cumberland	28
Halifax	49
Lunenburg	228
Mecklenburg	106
Nottoway	10
Prince Edward	112

CHESTERFIELD	(18,766)
Amelia	148
Brunswick	41
Buckingham	17
Caroline	31
Charles City	28
Cumberland	82
Dinwiddie	421
Goochland	35
Greensville	13
Hanover	367
Henrico	1,820
King William	15
Louisa	61
New Kent	39
Nottoway	53
Powhatan	885
Prince George	489
Richmond	38
Colonial Heights	1,077
Hopewell	739
Petersburg	913
Richmond	4,202

CLARKE	(1,832)
Frederick	548
Shenandoah	10
Warren	85
Winchester	704
Berkeley, WVA.	53
Hampshire, WVA.	32
Hardy, WVA.	18
Jefferson, WVA.	313
Morgan, WVA.	23

CRAIG	(618)
Alleghany	9
Botetourt	12
Montgomery	23
Roanoke County	13
Salem	13
Monroe, WVA.	11

CULPEPER	(6,530)
Fauquier	136
Greene	24
Louisa	26
Madison	776
Orange	398

Appendix 1, Continued

CULPEPER, Continued	
Rappahannock	257
Rockingham	13
Spotsylvania	13
Fredericksburg	41
CUMBERLAND	**(839)**
Buckingham	125
Prince Edward	92
DICKENSON	**(3,190)**
Buchanan	301
Russell	445
Tazewell	19
Wise	433
Norton	12
Pike, KY.	47
DINWIDDIE	**(2,206)**
Amelia	11
Brunswick	306
Chesterfield	160
Greensville	70
Henrico	37
Lunenburg	4
Mecklenburg	4
Nottoway	61
Prince George	19
Surry	19
Sussex	65
Colonial Heights	33
Petersburg	364
Richmond	39
ESSEX	**(2,277)**
Caroline	39
King and Queen	114
King William	49
Lancaster	4
Middlesex	76
Northumberland	91
Richmond	413
Westmoreland	271

FAIRFAX	(110,227)
Arlington	6,778
Caroline	170
Culpeper	272
Essex	32
Fauquier	1,368
Loudoun	5,968
Page	232
Prince William	12,746
Rappahannock	37
Shenandoah	181
Spotsylvania	643
Stafford	1,749
Warren	394
Alexandria	5,013
Fairfax	3,342
Falls Church	920
Fredericksburg	245
Manassas	1,040
Manassas Park	653
Winchester	41
Washington, D.C.	3,944
Calvert, MD.	78
Charles, MD.	372
Frederick, MD.	292
Montgomery, MD.	5,381
Prince George's, MD.	5,169
St. Mary's, MD.	43
FAUQUIER	**(8,525)**
Clarke	46
Culpeper	631
King George	17
Madison	18
Orange	93
Page	38
Rappahannock	233
Shenandoah	14
Spotsylvania	10
Stafford	38
Warren	145
Fredericksburg	17
Jefferson, WVA.	17

FLOYD	(2,565)
Carroll	31
Franklin	5
Montgomery	74
Patrick	66
Pulaski	15
Wythe	8
FLUVANNA	**(1,585)**
Albemarle	95
Buckingham	328
Cumberland	25
Louisa	70
Nelson	24
Charlottesville	59
FRANKLIN	**(9,113)**
Bedford	67
Botetourt	39
Floyd	46
Henry	143
Montgomery	20
Patrick	34
Pittsylvania	71
Pulaski	6
Roanoke	169
Martinsville	11
Radford	18
Roanoke	104
Salem	13
FREDERICK	**(4,244)**
Clarke	313
Page	4
Shenandoah	453
Warren	253
Winchester	1,440
Berkeley, WVA.	376
Hampshire, WVA.	279
Hardy, WVA.	11
Jefferson, WVA.	33
Mineral, WVA.	14
Morgan, WVA.	28

Appendix 1, Continued

GILES	(4,594)
Bland	39
Craig	8
Floyd	5
Montgomery	164
Pulaski	89
Tazewell	6
Radford	6
Salem	12
Mercer, WVA.	433
Monroe, WVA.	799

GLOUCESTER	(3,689)
King and Queen	22
King William	8
Mathews	222
Middlesex	154
York	115
Hampton	10
Newport News	192

GOOCHLAND	(1,568)
Amelia	10
Buckingham	47
Chesterfield	24
Cumberland	40
Fluvanna	65
Hanover	66
Henrico	289
Louisa	88
New Kent	11
Powhatan	67
Richmond City	140

GRAYSON	(3,544)
Carroll	325
Smyth	114
Washington	22
Wythe	110
Galax	81
Alleghaney, NC.	33
Ashe, NC.	123

GREENE	(932)
Albemarle	19
Fluvanna	14
Madison	62
Nelson	9
Orange	73
Rockingham	29
Charlottesville	19

GREENSVILLE	(648)
Brunswick	15
Southampton	18
Sussex	84
Emporia	121
Halifax, NC.	27
Northampton, NC.	23

HALIFAX	(5,022)
Campbell	41
Charlotte	107
Mecklenburg	158
Pittsylvania	64
Danville	51
South Boston	575
Caswell, NC.	34
Granville, NC.	74
Person, NC.	43

HANOVER	(7,536)
Buckingham	27
Caroline	1,145
Charles City	8
Chesterfield	450
Essex	29
Goochland	83
Henrico	2,752
King and Queen	37
King George	48
King William	293
Louisa	242
New Kent	80
Richmond	19
Spotsylvania	67
Charlottesville	13
Fredericksburg	20
Richmond	1,357

HENRICO	(28,776)
Amelia	84
Caroline	333
Charles City	328
Chesterfield	5,424
Cumberland	89
Essex	42
Fluvanna	57
Goochland	993
Greensville	4
Hanover	4,694
King and Queen	55
King William	265
Lancaster	18
Louisa	304
Middlesex	9
New Kent	427
Nottoway	14
Powhatan	183
Spotsylvania	39
Surry	13
Richmond	9,891

HENRY	(12,805)
Campbell	7
Floyd	20
Franklin	1,069
Patrick	973
Pittsylvania	313
Roanoke	8
Danville	81
Martinsville	1,595
Radford	8
Rockingham, NC.	295

HIGHLAND	(764)
Bath	38
Pendleton, WVA.	27
Pocahontas, WVA.	4

Appendix 1, Continued

ISLE OF WIGHT	(4,180)
James City	14
Southampton	309
Surry	229
Sussex	69
Chesapeake	83
Franklin	460
Hampton	216
Newport News	312
Norfolk	22
Portsmouth	211
Suffolk	764
Virginia Beach	50
Gates, NC.	62
Hertford, NC.	21
Northampton, NC.	24

JAMES CITY	(1,237)
Charles City	30
Chesterfield	14
Gloucester	161
Hanover	13
Henrico	39
King and Queen	12
King William	24
Mathews	27
New Kent	184
Surry	21
York	446
Hampton	34
Newport News	195
Norfolk	21
Richmond	7
Virginia Beach	12
Williamsburg	170

KING AND QUEEN	(673)
Essex	118
King William	75
Middlesex	12

KING GEORGE	(2,685)
Caroline	180
Essex	52
Northumberland	38
Richmond	113
Spotsylvania	299
Stafford	718
Westmoreland	502
Fredericksburg	258
St. Mary's, MD.	21

KING WILLIAM	(1,577)
Caroline	6
Chesterfield	63
Hanover	58
Henrico	110
King and Queen	376
Lancaster	4
Mathews	34
Middlesex	88
New Kent	159
Richmond County	15
Richmond City	41

LANCASTER	(2,617)
Mathews	34
Middlesex	118
Northumberland	447
Richmond County	110

LEE	(4,387)
Wise	58
Bell, KY.	16
Harlan, KY.	10
Claiborne, TN.	55
Hancock, TN.	73
Sullivan, TN.	12

LOUDOUN	(12,294)
Arlington	118
Clarke	370
Fairfax	2,311
Fauquier	564
Frederick	171
Prince William	495
Rappahannock	13
Stafford	20
Warren	94
Alexandria	136
Fairfax	81
Falls Church	14
Manassas	75
Manassas Park	73
Winchester	24
Washington, D.C.	161
Frederick, MD.	203
Montgomery, MD.	294
Prince George's, MD.	140
Jefferson, WVA.	308

LOUISA	(2,966)
Albemarle	166
Buckingham	17
Chesterfield	10
Cumberland	19
Fluvanna	145
Goochland	135
Hanover	36
Henrico	81
Madison	24
Orange	220
Spotsylvania	180
Charlottesville	57
Fredericksburg	15

LUNENBURG	(3,413)
Amelia	11
Brunswick	92
Charlotte	32
Mecklenburg	97
Nottoway	103
Prince Edward	61

Appendix 1, Continued

MADISON	(1,909)
Culpeper	30
Greene	98
Louisa	6
Orange	78
Rappahannock	43

MATHEWS	(1,514)
King and Queen	15
Lancaster	2
Middlesex	24

MECKLENBURG	(9,478)
Brunswick	505
Charlotte	362
Greensville	13
Halifax	356
Lunenburg	181
Nottoway	6
South Boston	27
Granville, NC.	373
Person, NC.	33
Vance, NC.	154
Warren, NC.	56

MIDDLESEX	(1,982)
Essex	91
King and Queen	94
King William	16
Lancaster	23
Mathews	58
Northumberland	6

MONTGOMERY	(20,051)
Bland	33
Botetourt	4
Carroll	111
Craig	208
Floyd	617
Franklin	9
Giles	1,111
Patrick	6
Pulaski	1,273
Roanoke	222

MONTGOMERY, Continued	
Wythe	53
Galax	5
Radford	724
Roanoke	56
Salem	97
Mercer, WVA.	12

NELSON	(1,856)
Albemarle	67
Amherst	207
Appomattox	10
Augusta	30
Campbell	15
Charlottesville	18
Lynchburg	23
Staunton	8
Waynesboro	43

NEW KENT	(679)
Charles City	282
Hanover	26
Henrico	119
King and Queen	17
King William	37
Middlesex	6
Richmond City	36

NORTHAMPTON	(4,050)
Accomack	783
Worcester, MD.	11

NORTHUMBERLAND	(1,890)
Lancaster	129
Middlesex	15
Richmond	81
Westmoreland	79

NOTTOWAY	(3,917)
Amelia	227
Brunswick	92
Charlotte	29
Cumberland	26

NOTTOWAY, Continued	
Dinwiddie	96
Greensville	14
Lunenburg	431
Mecklenburg	84
Prince Edward	274

ORANGE	(4,611)
Albemarle	174
Culpeper	111
Fluvanna	12
Greene	128
Louisa	324
Madison	407
Rappahannock	17
Spotsylvania	114
Stafford	12
Charlottesville	115
Fredericksburg	24

PAGE	(4,462)
Madison	9
Rappahannock	9
Rockingham	279
Shenandoah	90
Warren	59
Harrisonburg	27

PATRICK	(4,434)
Carroll	72
Floyd	95
Franklin	32
Giles	7
Henry	88
Galax	6
Martinsville	48
Radford	7
Rockingham, NC.	8
Surry, NC.	80

PITTSYLVANIA	(9,465)
Bedford	86
Campbell	274
Franklin	58

Appendix 1, Continued

PITTSYLVANIA, Continued	
Halifax	45
Henry	102
Mecklenburg	3
Danville	1,237
Lynchburg	13
Martinsville	29
Caswell, NC.	118
Person, NC.	19
Rockingham, NC.	27

POWHATAN	(1,488)
Amelia	76
Buckingham	42
Chesterfield	217
Cumberland	142
Fluvanna	14
Goochland	100
Henrico	58
Louisa	11
Nottoway	9
Prince Edward	63
Richmond City	111

PRINCE EDWARD	(4,302)
Amelia	99
Appomattox	68
Buckingham	460
Charlotte	217
Cumberland	750
Lunenburg	73
Nottoway	204

PRINCE GEORGE	(6,517)
Amelia	13
Chesterfield	826
Dinwiddie	462
Greensville	9
Henrico	35
Nottoway	16
Surry	35
Sussex	97
Colonial Heights	622
Hopewell	1,068
Petersburg	1,991
Richmond	53

PRINCE WILLIAM	(19,272)
Arlington	136
Caroline	35
Clarke	38
Culpeper	159
Fairfax	1,760
Fauquier	808
King George	48
Loudoun	119
Orange	26
Rappahannock	7
Spotsylvania	807
Stafford	2,439
Warren	146
Westmoreland	18
Alexandria	115
Fairfax	103
Falls Church	10
Fredericksburg	287
Manassas	1,127
Manassas Park	364
Washington, D.C.	49
Charles, MD.	13
Frederick, MD.	33
Montgomery, MD.	63
Prince George's, MD.	67
Jefferson, WVA.	13

PULASKI	(9,810)
Bland	82
Carroll	229
Floyd	24
Franklin	7
Giles	331
Grayson	48
Montgomery	399
Tazewell	12
Wythe	1,067
Galax	6
Radford	502
Roanoke	14
Monroe, WVA.	30
Surry, NC.	8

RAPPAHANNOCK	(1,095)
Culpeper	43
Fauquier	82
Page	25
Warren	166

RICHMOND	(1,676)
Essex	151
King George	13
Lancaster	88
Middlesex	13
Northumberland	175
Westmoreland	446

ROANOKE	(5,401)
Alleghany	17
Bedford	767
Botetourt	752
Craig	126
Floyd	124
Franklin	533
Giles	6
Henry	10
Montgomery	210
Pulaski	6
Rockbridge	14
Lexington	14
Radford	13
Roanoke	3,292
Salem	710

ROCKBRIDGE	(2,992)
Augusta	167
Bath	33
Botetourt	151
Buena Vista	475
Clifton Forge	26
Lexington	161
Lynchburg	15
Staunton	61

ROCKINGHAM	(11,666)
Augusta	890
Greene	28
Page	467
Shenandoah	449
Harrisonburg	1,262

Appendix 1, Continued

ROCKINGHAM, Continued	
Staunton	167
Waynesboro	20
Hardy, WVA.	229
Pendelton, WVA.	107
Pocahontas, WVA.	12

RUSSELL	(6,134)
Buchanan	150
Dickenson	224
Scott	153
Smyth	28
Tazewell	188
Washington	419
Wise	334
Bristol	80
Norton	11
Sullivan, TN.	39

SCOTT	(2,761)
Lee	233
Russell	65
Washington	10
Wise	96
Bristol	11
Norton	4
Hawkins, TN.	59
Sullivan, TN.	235
Washington, TN.	30

SHENANDOAH	(8,888)
Frederick	118
Page	126
Rockingham	641
Warren	196
Winchester	22
Hardy, WVA.	59
Pendelton, WVA.	13

SMYTH	(10,770)
Bland	15
Grayson	208
Scott	24
Tazewell	67

SMYTH, Continued	
Washington	1,150
Wythe	338
Bristol	47
Johnson, TN.	11
Washington, TN.	16

SOUTHAMPTON	(3,017)
Brunswick	50
Greensville	81
Isle of Wight	142
Prince George	3
Sussex	32
Chesapeake	15
Emporia	85
Franklin	133
Norfolk	12
Petersburg	39
Portsmouth	24
Suffolk	31
Gates, NC.	12
Halifax, NC.	27
Hertford, NC.	69
Northampton, NC.	62

SPOTSYLVANIA	(2,278)
Caroline	310
Essex	21
King George	65
Louisa	44
Madison	15
Orange	86
Stafford	369
Westmoreland	20
Fredericksburg	449

STAFFORD	(3,181)
Caroline	72
Fauquier	89
King George	52
Madison	34
Orange	13
Richmond	11
Spotsylvania	698
Westmoreland	12
Fredericksburg	505

SURRY	(1,011)
Chesterfield	24
Dinwiddie	6
Gloucester	11
Isle of Wight	293
James City	72
Prince George	16
Southampton	7
Sussex	69
York	12
Hampton	184
Newport News	266
Richmond	13

SUSSEX	(2,126)
Brunswick	16
Dinwiddie	92
Greensville	82
Isle of Wight	112
Prince George	76
Southampton	53
Surry	128
Emporia	8
Petersburg	22
Northampton, NC.	3

TAZEWELL	(11,145)
Bland	173
Buchanan	304
Dickenson	5
Giles	12
Russell	902
Smyth	68
Wythe	47
McDowell, WVA.	231
Mercer, WVA.	1,199

WARREN	(5,469)
Clarke	138
Fauquier	71
Frederick	341
Page	508
Rappahannock	221
Rockingham	28
Shenandoah	570
Winchester	132

Appendix 1, Continued

WARREN, Continued	
Hampshire, WVA.	12
Hardy, WVA.	14
Jefferson, WVA.	10
WASHINGTON	**(9,471)**
Dickenson	5
Grayson	61
Russell	129
Scott	26
Smyth	654
Tazewell	8
Wythe	6
Bristol	446
Norton	6
Carter, TN.	12
Johnson, TN.	71
Sullivan, TN.	345
Ashe, NC.	12
WESTMORELAND	**(2,793)**
Essex	18
King George	52
Lancaster	13
Northumberland	76
Richmond County	240
WISE	**(9,654)**
Dickenson	559
Lee	1,012
Russell	535
Scott	419
Tazewell	17
Norton	440
Harlan, KY.	58
Letcher, KY.	48
Pike, KY.	7
WYTHE	**(7,830)**
Bland	162
Carroll	194
Giles	18
Grayson	66
Montgomery	11

WYTHE, Continued	
Pulaski	155
Smyth	317
Tazewell	5
Galax	7
YORK	**(3,053)**
Gloucester	684
James City	258
King William	19
Mathews	146
Middlesex	48
Chesapeake	17
Hampton	650
Newport News	1,990
Norfolk	11
Poquoson	98
Portsmouth	41
Suffolk	15
Virginia Beach	37
Williamsburg	28
ALEXANDRIA	**(15,279)**
Arlington	3,266
Caroline	77
Culpeper	11
Fairfax	25,925
Fauquier	88
Frederick	16
Loudoun	415
Page	40
Prince William	4,326
Rappahannock	31
Stafford	793
Warren	22
Fairfax	390
Falls Church	46
Manassas	148
Manassas Park	73
Winchester	16
Washington, D.C.	3,156
Calvert, MD.	91
Charles, MD.	467
Frederick, MD.	80
Montgomery, MD.	1,225
Prince George's, MD.	3,962
St. Mary's, MD.	110

BEDFORD	(1,180)
Amherst	51
Bedford	2,820
Botetourt	94
Campbell	97
Franklin	18
Roanoke	103
Lynchburg	124
Roanoke	27
BRISTOL	**(4,375)**
Buchanan	8
Russell	65
Scott	86
Smyth	117
Tazewell	2
Washington	3,349
Wise	6
Carter, TN.	50
Hawkins, TN.	46
Johnson, TN.	33
Sullivan, TN.	4,678
Washington, TN.	171
BUENA VISTA	**(1,560)**
Amherst	48
Botetourt	23
Rockbridge	824
Lexington	98
CHARLOTTESVILLE	**(14,388)**
Albemarle	14,545
Appomattox	13
Augusta	257
Buckingham	314
Charlotte	20
Culpeper	11
Fluvanna	1,351
Greene	1,214
Louisa	922
Madison	158
Nelson	568
Orange	541
Page	8
Rockingham	107
Lynchburg	9

Appendix 1, Continued

CHARLOTTESVILLE, Continued	
Staunton	126
Waynesboro	141

CHESAPEAKE	(13,404)
Gloucester	28
Isle of Wight	31
Northampton	5
York	15
Franklin	14
Hampton	84
Newport News	27
Norfolk	2,415
Poquoson	24
Portsmouth	2,336
Suffolk	416
Virginia Beach	4,348
Camden, NC.	89
Chowan, NC.	13
Currituck, NC.	366
Dare, NC.	9
Gates, NC.	31
Hertford, NC.	50
Pasqudtank, NC.	159
Perquimans, NC.	30

CLIFTON FORGE	(943)
Alleghany	734
Bath	146
Botetourt	278
Rockbridge	12
Covington	144
Lexington	27
Roanoke	12
Greenbrier, WVA.	6

COLONIAL HEIGHTS	(1,878)
Amelia	11
Charles City	11
Chesterfield	843
Dinwiddie	314
Hanover	9
Henrico	59
Prince George	240
Sussex	32
Hopewell	134

COLONIAL HEIGHTS, Continued	
Petersburg	997
Richmond	35

COVINGTON	(2,520)
Alleghany	2,974
Bath	115
Bedford	11
Botetourt	138
Craig	22
Highland	4
Roanoke	50
Rockbridge	39
Clifton Forge	284
Roanoke	21
Greenbrier, WVA.	295
Monroe, WVA.	60
Pocahontas, WVA.	9

DANVILLE	(16,605)
Amherst	30
Bedford	8
Campbell	32
Franklin	25
Halifax	305
Henry	196
Mecklenburg	24
Pittsylvania	11,256
Lynchburg	9
Martinsville	32
South Boston	12
Caswell, NC.	1,442
Person, NC.	43
Rockingham, NC.	302

EMPORIA	(1,153)
Brunswick	255
Dinwiddie	49
Greensville	2,230
Lunenburg	4
Southampton	168
Sussex	124
Northampton, NC.	102

FAIRFAX	(2,697)
Arlington	602
Essex	24
Fairfax	11,268
Fauquier	475
Frederick	86
Loudoun	628
Prince William	1,379
Rappahannock	105
Stafford	177
Warren	209
Alexandria	495
Falls Church	44
Manassas	262
Manassas Park	221
Washington, D.C.	580
Calvert, MD.	6
Charles, MD.	40
Frederick, MD.	67
Montgomery, MD.	504
Prince George's, MD.	487
St. Mary's, MD.	15

FALLS CHURCH	(1,117)
Arlington	1,626
Fairfax	6,458
Fauquier	210
Loudoun	401
Prince William	613
Rappahannock	22
Stafford	131
Alexandria	633
Fairfax	197
Manassas	59
Manassas Park	98
Washington, D.C.	268
Charles, MD.	23
Frederick, MD.	29
Montgomery, MD.	537
Prince George's, MD.	375

FRANKLIN	(1,137)
Greensville	40
Isle of Wight	388
Southampton	2,194
Sussex	26
Chesapeake	82

Appendix 1, Continued

FRANKLIN, Continued	
Norfolk	44
Portsmouth	28
Suffolk	445
Virginia Beach	13
Bertie, NC.	2
Gates, NC.	228
Hertford, NC.	169
Northampton, NC.	55

FREDERICKSBURG	(3,217)
Caroline	572
Culpeper	21
Essex	18
Fauquier	51
King George	447
Louisa	39
Orange	284
Richmond	24
Spotsylvania	5,985
Stafford	3,903
Westmoreland	124

GALAX	(2,272)
Carroll	3,254
Grayson	1,917
Patrick	2
Pulaski	13
Smyth	13
Wythe	31
Alleghaney, NC.	203

HAMPTON	(30,026)
Gloucester	506
Isle of Wight	305
James City	192
Lancaster	17
Mathews	70
Middlesex	15
Southampton	10
Surry	69
York	4,140
Chesapeake	205
Newport News	10,595
Norfolk	714

HAMPTON, Continued	
Poquoson	1,471
Portsmouth	154
Suffolk	52
Virginia Beach	632
Williamsburg	79
Currituck, NC.	9

HARRISONBURG	(6,073)
Albemarle	28
Augusta	606
Greene	10
Page	299
Rockingham	10,458
Shenandoah	186
Charlottesville	45
Staunton	53
Waynesboro	26
Grant, WVA.	12
Hardy, WVA.	41
Pendleton, WVA.	46

HOPEWELL	(5,024)
Brunswick	38
Charles City	64
Chesterfield	1,973
Dinwiddie	391
Greensville	31
Hanover	32
Henrico	186
New Kent	10
Nottoway	35
Prince George	1,541
Sussex	235
Colonial Heights	680
Emporia	11
Petersburg	1,063
Richmond	288

LEXINGTON	(1,680)
Augusta	16
Rockbridge	2,142
Buena Vista	391

LYNCHBURG	(24,317)
Albemarle	12
Amherst	5,730
Appomattox	1,545
Bedford	3,061
Botetourt	43
Buckingham	58
Campbell	11,327
Charlotte	142
Cumberland	17
Franklin	17
Lunenburg	16
Nelson	258
Pittsylvania	497
Prince Edward	52
Rockbridge	14
Bedford	145
Charlottesville	12
Danville	29
Staunton	13

MANASSAS	(2,330)
Arlington	94
Culpeper	113
Fairfax	1,264
Fauquier	1,050
Loudoun	122
Prince William	5,637
Spotsylvania	53
Stafford	68
Warren	62
Alexandria	33
Fairfax	67
Falls Church	12
Manassas Park	455
Washington, D.C.	22
Charles, MD.	13
Frederick, MD.	9
Montgomery, MD.	108
Prince George's, MD.	71

MANASSAS PARK	(138)
Arlington	8
Fairfax	60
Fauquier	2
Prince William	127

Appendix 1, Continued

MANASSAS PARK, Continued	
Fairfax	18
Manassas	35
MARTINSVILLE	**(5,173)**
Floyd	17
Franklin	907
Henry	11,383
Montgomery	21
Patrick	578
Pittsylvania	1,029
Roanoke	14
Danville	201
Rockingham, NC.	748
NEWPORT NEWS	**(39,899)**
Gloucester	1,291
Isle of Wight	1,119
James City	660
King William	54
Lancaster	2
Mathews	182
Middlesex	51
Southampton	167
Surry	108
Sussex	102
York	3,084
Chesapeake	656
Franklin	51
Hampton	14,479
Norfolk	1,859
Poquoson	1,062
Portsmouth	710
Suffolk	627
Virginia Beach	1,496
Williamsburg	350
Currituck, NC.	8
Gates, NC.	273
NORFOLK	**(73,478)**
Accomack	9
Gloucester	79
Isle of Wight	340
James City	62
Northampton	31

NORFOLK, Continued	
Southampton	76
York	343
Chesapeake	15,266
Franklin	73
Hampton	1,515
Newport News	1,291
Poquoson	189
Portsmouth	7,755
Suffolk	1,286
Virginia Beach	41,499
Williamsburg	11
Camden, NC.	222
Chowan, NC.	77
Currituck, NC.	418
Dare, NC.	10
Gates, NC.	74
Hertford, NC.	9
Pasquotank, NC.	256
Perquimans, NC.	60
NORTON	**(1,054)**
Dickenson	63
Lee	91
Russell	82
Wise	1,671
Letcher, KY.	28
PETERSBURG	**(8,967)**
Amelia	23
Brunswick	83
Chesterfield	2,790
Dinwiddie	3,446
Greensville	41
Hanover	10
Henrico	89
Nottoway	85
Prince Edward	13
Prince George	2,032
Surry	71
Sussex	460
Colonial Heights	1,953
Emporia	9
Hopewell	947
Richmond	219

POQUOSON	(740)
Gloucester	35
York	91
Hampton	65
Newport News	99
Virginia Beach	13
PORTSMOUTH	**(23,939)**
Isle of Wight	412
James City	22
Northampton	13
Southampton	52
York	37
Chesapeake	8,849
Franklin	26
Hampton	124
Newport News	406
Norfolk	4,041
Poquoson	9
Suffolk	2,432
Virginia Beach	4,155
Camden, NC.	92
Chowan, NC.	46
Currituck, NC.	247
Gates, NC.	119
Hertford, NC.	32
Pasquotank, NC.	197
Perquimans, NC.	51
RADFORD	**(3,382)**
Bland	16
Carroll	114
Floyd	174
Franklin	5
Giles	210
Montgomery	1,778
Pulaski	2,535
Roanoke	96
Tazewell	12
Wythe	166
Roanoke	18
Salem	103

Appendix 1, Continued

RICHMOND	(71,092)
Albemarle	32
Amelia	596
Brunswick	75
Buckingham	71
Caroline	537
Charles City	991
Chesterfield	31,171
Cumberland	275
Dinwiddie	460
Essex	184
Fluvanna	51
Goochland	1,604
Greensville	13
Hanover	9,502
Henrico	49,751
King and Queen	379
King George	36
King William	876
Lancaster	27
Louisa	844
Lunenburg	44
Mathews	22
Middlesex	129
New Kent	1,317
Northumberland	141
Nottoway	92
Orange	55
Powhatan	2,223
Prince Edward	53
Prince George	218
Richmond	21
Spotsylvania	120
Sussex	54
Charlottesville	10
Colonial Heights	994
Fredericksburg	15
Hopewell	858
Petersburg	1,146

ROANOKE	(27,308)
Alleghany	22
Bedford	2,753
Bland	9
Botetourt	3,268
Campbell	26
Carroll	7

ROANOKE, Continued	
Craig	281
Floyd	398
Franklin	1,998
Giles	12
Henry	67
Montgomery	621
Patrick	6
Pulaski	50
Roanoke	17,193
Rockbridge	118
Bedford	106
Buena Vista	38
Clifton Forge	18
Covington	25
Lexington	14
Lynchburg	42
Martinsville	26
Radford	75
Salem	3,669
Mercer, WVA.	11
Monroe, WVA.	13

SALEM	(5,489)
Bedford	277
Botetourt	762
Carroll	7
Craig	305
Floyd	203
Franklin	627
Giles	13
Montgomery	670
Patrick	7
Roanoke	6,876
Rockbridge	14
Bedford	14
Buena Vista	16
Lexington	17
Martinsville	9
Radford	40
Roanoke	5,447

SOUTH BOSTON	(1,995)
Campbell	4
Charlotte	67
Halifax	4,049
Lunenburg	4

SOUTH BOSTON, Continued	
Mecklenburg	128
Pittsylvania	74
Caswell, NC.	12
Person, NC.	45

STAUNTON	(6,462)
Albemarle	42
Augusta	5,213
Bath	18
Highland	16
Nelson	29
Rockbridge	162
Rockingham	225
Buena Vista	14
Harrisonburg	89
Waynesboro	179

SUFFOLK	(10,302)
Gloucester	12
Isle of Wight	751
Southampton	87
Chesapeake	705
Franklin	103
Hampton	51
Newport News	77
Norfolk	213
Portsmouth	1,216
Virginia Beach	362
Williamsburg	18
Camden, NC.	13
Chowan, NC.	45
Gates, NC.	348
Hertford, NC.	47
Pasquotank, NC.	19
Perquimans, NC.	21

VIRGINIA BEACH	(60,473)
Accomack	10
Isle of Wight	2
York	42
Chesapeake	4,843
Hampton	356
Newport News	401
Norfolk	8,762

Appendix 1, Continued

VIRGINIA BEACH, Continued	
Poquoson	13
Portsmouth	1,156
Suffolk	263
Williamsburg	16
Camden, NC.	32
Chowan, NC.	5
Currituck, NC.	369
Dare, NC.	5
Gates, NC.	9
Pasquotank, NC.	13
Perquimans, NC.	26

WAYNESBORO	(5,172)
Albemarle	141
Augusta	6,373
Nelson	343
Page	32
Rockbridge	72
Rockingham	296
Buena Vista	13
Charlottesville	48
Harrisonburg	23
Staunton	730

WILLIAMSBURG	(3,287)
Charles City	296
Chesterfield	75
Gloucester	547
Henrico	100
James City	6,074
King and Queen	89
King William	151
Mathews	63
Middlesex	35
New Kent	239
Surry	137
York	2,663
Chesapeake	37
Hampton	699
Newport News	3,271
Norfolk	101
Poquoson	44
Portsmouth	28
Richmond	40
Suffolk	62
Virginia Beach	92

WINCHESTER	(5,628)
Clarke	531
Frederick	7,560
Page	10
Shenandoah	550
Warren	407
Berkeley, WVA.	501
Grant, WVA.	21
Hampshire, WVA.	725
Hardy, WVA.	93
Jefferson, WVA.	85
Mineral, WVA.	16
Morgan, WVA.	140

Appendix 2. Out-Commuting from Virginia Localities

ACCOMACK	12,131
Accomack	9,104
Northampton	783
Worcester, MD.	446
Somerset, MD.	8
Salisbury City, MD.	63
Balance of Wicomico, MD.	27
Virginia Beach City	10
Norfolk City	9
Worked elsewhere	284
Not reported	1,397

ALBEMARLE	26,369
Albemarle	8,124
Charlottesville City	14,545
Greene	19
Fluvanna	95
Louisa	166
Augusta	31
Staunton City	42
Waynesboro City	141
Orange	174
Buckingham	43
Nelson	67
Harrisonburg City	28
Lynchburg City	12
Amherst	11
Richmond City	32
Worked elsewhere	357
Not reported	2,482

ALLEGHANY	5,549
Alleghany	924
Clifton Forge City	734
Covington City	2,974
Bath	235
Botetourt	25
Craig	9
Greenbrier, WVA.	89
Roanoke City	22
Roanoke	17
Worked elsewhere	231
Not reported	289

AMELIA	3,640
Amelia	1,652
Richmond City	596
Henrico	84
Chesterfield	148
Powhatan	76
Prince Edward	99
Nottoway	227
Dinwiddie	11
Colonial Heights City	11
Petersburg City	23
Prince George	13
Goochland	10
Lunenburg	11
Lynchburg SMSA	13
Worked elsewhere	49
Not reported	617

AMHERST	12,240
Amherst	4,997
Lynchburg City, CBD	661
Balance of Lynchburg City	5,069
Appomattox	38
Altavista Town	14
Balance of Campbell	179
Danville City	30
Bedford City	51
Bedford	30
Nelson	207
Buena Vista City	48
Buckingham	19
Charlottesville City	13
Albemarle	15
Worked elsewhere	233
Not reported	636

APPOMATTOX	5,108
Appomattox	2,923
Lynchburg City, CBD	76
Balance of Lynchburg City	1,469
Amherst	68
Campbell	40
Nelson	10

APPOMATTOX, Continued	
Prince Edward	68
Buckingham	9
Charlotte	28
Worked elsewhere	122
Not reported	295

ARLINGTON	90,007
Arlington	27,507
Washington, D.C., CBD	10,769
Balance of Washington	26,231
Rockville City, MD.	270
Balance of Montgomery, MD.	2,405
Prince George's, MD.	1,139
Charles, MD.	54
Alexandria City	3,266
Fairfax City	602
Falls Church City	1,626
Fairfax	6,778
Loudoun	118
Manassas City	94
Manassas Park City	8
Prince William	136
Anne Arundel, MD.	58
Howard, MD.	20
Balance of Baltimore SMSA	30
Worked elsewhere	825
Not reported	8,071

AUGUSTA	23,905
Augusta	7,841
Staunton City	5,213
Waynesboro City	6,373
Rockbridge	167
Lexington City	16
Rockingham	890
Harrisonburg City	606
Albemarle	200
Charlottesville City	257
Nelson	30
Bath	114
Worked elsewhere	299
Not reported	1,899

Appendix 2, Continued

BATH	2,652
Bath	2,097
Alleghany	3
Clifton Forge City	146
Covington City	115
Rockbridge	33
Augusta	38
Staunton City	18
Highland	38
Greenbrier, WVA.	10
Worked elsewhere	59
Not reported	95

BEDFORD	14,767
Bedford	3,044
Lynchburg City	3,061
Altavista Town	228
Balance of Campbell	222
Bedford City	2,820
Roanoke City	2,753
Roanoke	767
Salem City	277
Pittsylvania	86
Danville City	8
Franklin	67
Botetourt	143
Alleghany	29
Covington City	11
Amherst	94
Worked elsewhere	228
Not reported	929

BLAND	2,369
Bland	1,161
Bluefield City , WVA.	340
Balance of Mercer, WVA.	117
Tazewell	173
Wythe	162
Pulaski Town	18
Balance of Pulaski	64
Giles	39
Radford City	16
Montgomery	33
Roanoke City	9
Smyth	15
Worked elsewhere	75
Not reported	147

BOTETOURT	10,208
Botetourt	3,428
Roanoke City, CBD	751
Balance of Roanoke City	2,517
Salem City	762
Vinton Town	116
Balance of Roanoke Co.	636
Craig	12
Montgomery	4
Alleghany	122
Covington City	138
Clifton Forge City	278
Bedford	92
Bedford City	94
Franklin	39
Rockbridge	151
Buena Vista City	23
Lynchburg City	43
Worked elsewhere	269
Not reported	733

BRUNSWICK	5,855
Brunswick	3,750
Greensville	15
Emporia City	255
Dinwiddie	306
Nottoway	92
Lunenburg	92
Mecklenburg	505
Northampton, NC.	32
Halifax, NC.	19
Richmond City	75
Chesterfield	41
Hopewell City	38
Petersburg City	83
Sussex	16
Southampton	50
Worked elsewhere	71
Not reported	415

BUCHANAN	11,249
Buchanan	9,418
Dickenson	301
Russell	150
Tazewell	304
McDowell, WVA.	57
Pikeville City, KY.	10

BUCHANAN, Continued	
Balance of Pike, KY.	210
Wise	17
Bristol City	8
Mingo, WVA.	5
Worked elsewhere	94
Not reported	675

BUCKINGHAM	4,670
Buckingham	2,103
Lynchburg City	58
Amherst	13
Campbell	12
Richmond City	71
Hanover	27
Chesterfield	17
Albemarle	339
Charlottesville City	314
Appomattox	154
Prince Edward	460
Cumberland	125
Fluvanna	328
Goochland	47
Powhatan	42
Amelia	9
Louisa	17
Worked elsewhere	114
Not reported	420

CAMPBELL	20,282
Altavista Town	2,714
Balance of Campbell	3,597
Lynchburg City, CBD	768
Balance of Lynchburg	10,559
Amherst	442
Appomattox	120
Pittsylvania	274
Danville City	32
Bedford City	97
Bedford	134
Nelson	15
South Boston City	4
Halifax	41
Charlotte	4
Roanoke City	26
Henry	7
Worked elsewhere	212
Not reported	1,236

Appendix 2, Continued

CAROLINE	7,225
Caroline	2,509
Richmond City	537
Hanover	1,145
Henrico	333
Chesterfield	31
Spotsylvania	310
Fredericksburg City	572
Stafford	72
King George	180
Essex	39
King William	6
Washington, D.C.	107
Fairfax	170
Arlington	19
Alexandria City	77
Prince William	35
Balance of Washington SMSA	40
Worked elsewhere	222
Not reported	821

CARROLL	11,608
Carroll	4,898
Galax City	3,254
Grayson	325
Wytheville Town	94
Balance of Wythe	100
Pulaski Town	82
Balance of Pulaski	147
Floyd	31
Patrick	72
Mount Airy City, NC.	1,003
Balance of Surry, NC.	407
Alleghany, NC.	10
Winston-Salem City, NC.	80
Balance of Forsyth, NC.	24
Roanoke City	7
Salem City	7
Radford City	114
Blacksburg Town	6
Balance of Montgomery	105
Worked elsewhere	348
Not reported	494

CHARLES CITY	3,087
Charles City	563
Richmond City, CBD	115
Balance of Richmond	876
Henrico	328
Chesterfield	28
Hanover	8
New Kent	282
Colonial Heights City	11
Hopewell City	64
James City	30
Williamsburg City	296
Balance of Newport News-Hampton SMSA	92
Worked elsewhere	82
Not reported	312

CHARLOTTE	4,614
Charlotte	2,618
Lynchburg City	142
Campbell	266
Halifax	107
South Boston City	67
Mecklenburg	362
Lunenburg	32
Prince Edward	217
Appomattox	122
Buckingham	29
Nottoway	29
Richmond SMSA	49
Charlottesville City	20
Worked elsewhere	250
Not reported	304

CHESTERFIELD	69,045
Chesterfield	18,766
Richmond City, CBD	6,125
Balance of Richmond City	25,046
Henrico	5,424
Goochland	24
Hanover	450
Powhatan	217

CHESTERFIELD, Continued	
Colonial Heights City	843
Petersburg City	2,790
Hopewell City	1,973
Dinwiddie	160
Prince George	826
James City	14
Williamsburg City	75
Balance of Newport News-Hampton SMSA	44
Surry	24
Louisa	10
King William	63
Worked elsewhere	1,061
Not reported	5,110

CLARKE	4,380
Clarke	1,832
Frederick	313
Winchester City	531
Warren	138
Fauquier	46
Berkeley, WVA.	64
Jefferson, WVA.	40
Washington, D.C.	47
Loudoun	370
Prince William	38
Balance of Washington, D.C. SMSA (VA part)	256
Balance of Washington, D.C. SMSA (MD part)	74
Morgan, WVA.	16
Worked elsewhere	126
Not reported	489

CRAIG	1,651
Craig	618
Roanoke City, CBD	56
Balance of Roanoke City	225
Salem City	305
Roanoke	126
Botetourt	14

Appendix 2, Continued

CRAIG, Continued	
Blacksburg Town	170
Balance of Montgomery	38
Alleghany	14
Covington City	22
Giles	8
Worked elsewhereq	37
Not reported	18
CULPEPER COUNTY	**9,434**
Culpeper Town	4,461
Balance of Culpeper	2,069
Fauquier	631
Rappahannock	43
Madison	30
Orange	111
Fredericksburg City	87
Stafford	21
Washington, D.C.	148
Manassas City	113
Prince William	159
Fairfax	272
Alexandria City	11
Arlington	88
Balance of Washington, D.C. SMSA	256
Richmond SMSA	13
Albemarle	31
Charlottesville City	11
Worked elsewhere	47
Not reported	832
CUMBERLAND	**2,762**
Cumberland	839
Richmond City	275
Henrico	89
Chesterfield	82
Lynchburg City	17
Campbell	12
Buckingham	67
Fluvanna	25
Goochland	40
Powhatan	142
Amelia	12
Prince Edward	750
Nottoway	26
Appomattox	14
Charlotte	28
Louisa	19

CUMBERLAND, Continued	
Worked elsewhere	49
Not reported	276
DICKENSON	**5,176**
Dickenson	3,190
Wise	559
Norton City	63
Russell	224
Buchanan	542
Pike, KY.	44
Letcher, KY.	21
Washington	5
Tazewell	5
Perry, KY.	8
Harlan, KY.	1
Sullivan, TN.	3
Worked elsewhere	2
Not reported	509
DINWIDDIE	**8,802**
Dinwiddie	2,206
Petersburg City, CBD	395
Balance of Petersburg	3,051
Colonial Heights City	314
Hopewell City, CBD	23
Balance of Hopewell City	368
Prince George	462
Richmond City	460
Chesterfield	421
Remainder of Richmond SMSA	114
Nottoway	96
Sussex	92
Emporia City	49
Brunswick	26
Amelia	19
Surry	6
Worked elsewhere	45
Not reported	655
ESSEX	**3,807**
Essex	2,277
Richmond City	184
Henrico	42
Hanover	29
Remainder of Richmond SMSA	27
Richmond	151
King George	52

ESSEX, Continued	
Caroline	105
King and Queen	118
Middlesex	91
Westmoreland	18
Washington, D.C.	11
Arlington	17
Fairfax	32
Fairfax City	24
Remainder of Washington, D.C. SMSA	60
Spotsylvania	21
Fredericksburg City	18
Worked elsewhere	45
Not reported	485
FAIRFAX	**316,497**
Fairfax	110,227
Washington, D.C., CBD	19,787
Balance of Washington, D.C.	55,166
Rockville City, MD.	1,582
Balance of Montgomery, MD.	8,795
Prince George's, MD.	5,536
Charles, MD.	82
Arlington	36,399
Alexandria City	25,925
Fairfax City	11,268
Falls Church City	6,458
Loudoun	2,311
Manassas City	1,264
Manassas Park City	60
Prince William	1,760
Calvert, MD.	14
Frederick, MD.	58
Anne Arundel, MD.	416
Howard, MD.	123
Remainder of Baltimore SMSA	313
Worked elsewhere	3,926
Not reported	25,027
FAUQUIER	**16,709**
Fauquier	8,525
Washington, D.C.	670
Arlington	255
Fairfax City	475
Alexandria City	88
Falls Church City	210

Appendix 2, Continued

FAUQUIER, Continued	
Fairfax	1,368
Loudoun	564
Manassas City	1,050
Manassas Park City	2
Prince William	808
Remainder of Washington, D.C. SMSA	145
Stafford	89
Fredericksburg City	51
Culpeper	136
Rappahannock	82
Warren	71
Worked elsewhere	388
Not reported	1,732

FLOYD	4,678
Floyd	2,565
Roanoke City	398
Roanoke	124
Salem City	203
Blacksburg Town	233
Balance of Montgomery	384
Radford City	174
Pulaski	24
Carroll	103
Patrick	95
Henry	20
Martinsville City	17
Giles	5
Franklin	46
Worked elsewhere	52
Not reported	235

FLUVANNA	4,473
Fluvanna	1,585
Charlottesville City	1,351
Albemarle	551
Greene	14
Louisa	145
Orange	12
Powhatan	14
Richmond City	51
Henrico	57
Goochland	65
Worked elsewhere	71
Not reported	557

FRANKLIN	15,468
Franklin	9,113
Roanoke City	1,998
Roanoke	533
Salem City	627
Lynchburg City	17
Campbell	6
Bedford	27
Bedford City	18
Pittsylvania	58
Danville City	25
Henry	1,069
Martinsville City	907
Patrick	32
Floyd	5
Montgomery	9
Radford City	5
Pulaski	7
Worked elsewhere	177
Not reported	835

FREDERICK	15,400
Frederick	4,244
Winchester City	7,560
Washington, D.C.	28
Alexandria City	16
Loudoun	171
Arlington	36
Fairfax City	86
Remainder of Washington, D.C. SMSA (VA part)	149
Remainder of Washington, D.C. SMSA (MD part)	46
Clarke	548
Front Royal Town	259
Balance of Warren	82
Shenandoah	118
Hampshire, WVA.	23
Morgan, WVA.	16
Martinsburg City, WVA.	71
Balance of Berkeley, WVA.	93
Jefferson, WVA.	15
Frederick, MD.	14
Hagerstown, MD. SMSA	37
Worked elsewhere	341
Not reported	1,447

GILES	7,001
Giles	4,594
Roanoke City	12
Roanoke	6
Salem City	13
Blacksburg Town	885
Balance of Montgomery	226
Radford City	210
Pulaski	331
Bland	72
Monroe, WVA.	8
Mercer, WVA.	171
Tazewell	12
Wythe	18
Carroll	11
Patrick	7
Greenbrier, WVA.	2
Worked elsewhere	176
Not reported	247

GLOUCESTER	8,308
Gloucester	3,689
Newport News City, CBD	142
Balance of Newport News	1,149
Hampton City, CBD	14
Balance of Hampton City	492
Poquoson City	35
Williamsburg City	547
James City	161
York	684
Norfolk City	79
Chesapeake City	28
Suffolk City	12
Surry	11
Richmond SMSA	67
Worked elsewhere	410
Not reported	788

GOOCHLAND	5,287
Goochland	1,568
Richmond City, CBD	252
Balance of Richmond City	1,352
Henrico	993
Chesterfield	35
Hanover	83
Powhatan	100
Louisa	135

Appendix 2, Continued

GOOCHLAND, Continued	
Worked elsewhere	200
Not reported	569
GRAYSON	**6,890**
Grayson	3,544
Galax City	1,917
Carroll	163
Wytheville Town	31
Balance of Wythe	35
Marion Town	125
Balance of Smyth	83
Ashe, NC.	122
Alleghany, NC.	129
Winston-Salem City, NC.	12
Balance of Forsyth, NC.	6
Washington	61
Surry, NC.	104
Wilkes, NC.	15
Pulaski, NC.	48
Worked elsewhere	222
Not reported	273
GREENE	**3,601**
Greene	932
Charlottesville City	1,214
Albemarle	768
Orange	128
Madison	98
Culpeper	24
Rockingham	28
Harrisonburg City	10
Worked elsewhere	103
Not reported	296
GREENSVILLE	**4,136**
Greensville	648
Emporia City	2,230
Southampton	81
Franklin City	40
Sussex	82
Dinwiddie	70
Brunswick	118
Northampton, NC.	32
Halifax, NC.	87
Hampton SMSA	24

GREENSVILLE, Continued	
Richmond City	13
Chesterfield	13
Henrico	4
Prince George	9
Petersburg City	41
Hopewell City	31
Nottoway	14
Mecklenburg	13
Worked elsewhere	144
Not reported	466
HALIFAX	**12,777**
Halifax	5,022
South Boston City	4,049
Lynchburg City	170
Altavista Town	190
Balance of Campbell	678
Amherst	21
Durham, NC.	2
Orange, NC.	9
Greensboro-Winston-Salem-High Point, NC. SMSA	8
Pittsylvania	45
Danville City	305
Mecklenburg	356
Granville, NC.	17
Person, NC.	362
Charlotte	49
Worked elsewhere	371
Not reported	1,123
HANOVER	**24,854**
Hanover	7,536
Richmond City, CBD	2,043
Balance of Richmond City	7,459
Henrico	4,694
Chesterfield	367
Goochland	66
New Kent	26
Colonial Heights City	9
Petersburg City	10
Hopewell City	32
James City	13
Remainder of Newport News-	
Not reported	2,091

HANOVER, Continued	
Louisa	36
King William	58
Worked elsewhere	470
Not reported	2,011
HENRICO	**93,162**
Henrico	28,776
Richmond City, CBD	11,422
Balance of Richmond City	38,329
Charles City	85
Chesterfield	1,820
Goochland	289
Hanover	2,752
New Kent	119
Powhatan	58
Colonial Heights City	59
Petersburg City	89
Hopewell City	186
Dinwiddie	37
Prince George	35
James City	39
Williamsburg City	100
Remainder of Newport News-Hampton SMSA	113
Louisa	81
King William	110
Worked elsewhere	1,090
Not reported	7,573
HENRY	**27,767**
Henry	12,805
Greensboro City, NC.	15
Balance of Guilford, NC.	12
Roanoke City	67
Roanoke	10
Martinsville City	11,383
Pittsylvania	102
Danville City	196
Franklin	143
Patrick	88
Eden City, NC.	423
Balance of Rockingham, NC.	194
Lynchburg SMSA	16
Worked elsewhere	222

Appendix 2, Continued

HIGHLAND	1,222
Highland	764
Augusta	20
Staunton City	16
Bath	340
Pocahontas, WVA.	9
Pendleton, WVA.	25
Covington City	4
Worked elsewhere	12
Not reported	32

ISLE OF WIGHT	9,667
Isle of Wight	4,180
Chesapeake City	31
Portsmouth City	412
Norfolk City	340
Virginia Beach City	2
Suffolk City	751
Southampton	142
Franklin City	388
Surry	293
Sussex	112
Newport News City	1,119
Hampton City	305
Worked elsewhere	189
Not reported	1,403

JAMES CITY	9,935
James City	1,237
Newport News City, CBD	14
Balance of Newport News	646
Hampton City	192
Williamsburg City	6,074
York	258
Norfolk City	62
Portsmouth City	22
Isle of Wight	14
Surry	72
Richmond SMSA	218
Worked elsewhere	113
Not reported	1,013

KING AND QUEEN	2,374
King and Queen	673
Richmond City	379
Henrico	55
Hanover	37
King William	376
Caroline	82
Essex	114
Middlesex	94
New Kent	17
Mathews	15
James City	12
Gloucester	22
Williamsburg City	89
Petersburg-Colonial Heights-Hopewell SMSA	19
Worked elsewhere	92
Not reported	307

KING GEORGE	4,435
King George	2,685
Stafford	52
Spotsylvania	65
Caroline	66
Westmoreland	52
Washington, D.C.	152
Prince William	48
Remainder of Washington, D.C. SMSA (VA portion)	120
Charles, MD.	144
Remainder of Washington, D.C. SMSA	104
Richmond City	36
Hanover	48
Remainder of Richmond SMSA	10
Fredericksburg City	447
Richmond	13
Fauquier	17
Worked elsewhere	49
Not reported	327

KING WILLIAM	3,983
King William	1,577

KING WILLIAM, Continued	
Richmond City	876
Hanover	293
Henrico	265
Chesterfield	15
New Kent	37
King and Queen	75
Caroline	24
James City	24
Williamsburg City	151
Newport News City	54
York	19
Gloucester	8
Middlesex	16
Essex	49
Worked elsewhere	102
Not reported	398

LANCASTER	3,643
Lancaster	2,617
Northumberland	129
Richmond	88
Westmoreland	13
Essex	4
Middlesex	23
Mathews	2
King William	4
Richmond City	27
Henrico	18
Newport News City	2
Hampton City	17
Remainder of Newport News-Hampton SMSA	13
Worked elsewhere	108
Not reported	578

LEE	7,425
Lee	4,387
Wise	1,012
Norton City	91
Scott	233
Claiborne, TN.	78
Middlesboro City, TN.	306

Appendix 2, Continued

LEE, Continued	
Balance of Bell, KY.	85
Harlan, KY.	265
Knoxville City, TN.	5
Hawkins, TN.	15
Hancock, TN.	26
Sullivan, TN.	40
Worked elsewhere	300
Not reported	582

LOUDOUN	28,297
Loudoun	12,294
Washington, D.C., CBD	640
Balance of Washington, D.C.	1,960
Rockville City, MD.	90
Balance of Montgomery, MD.	602
Prince George's, MD.	232
Arlington	1,176
Alexandria City	415
Fairfax City	628
Falls Church City	401
Fairfax	5,968
Manassas City	122
Prince William	119
Frederick, MD.	139
Anne Arundel, MD.	26
Balance of Baltimore SMSA	30
Worked elsewhere	629
Not reported	2,826

LOUISA	7,361
Louisa	2,966
Richmond City	844
Hanover	242
Henrico	304
Chesterfield	61
Goochland	88
Fluvanna	70
Albemarle	182
Charlottesville City	922
Orange	324
Spotsylvania	44
Caroline	25
Fredericksburg City	39
Madison	6

LOUISA, Continued	
Culpeper	26
Powhatan	11
Lynchburg SMSA	12
Worked elsewhere	287
Not reported	908

LUNENBURG	5,022
Lunenburg	3,413
Brunswick	20
Mecklenburg	181
Charlotte	228
Prince Edward	73
Nottoway	431
South Boston City	4
Emporia City	4
Lynchburg City	16
Richmond City	44
Balance of Richmond SMSA	61
Dinwiddie	4
Balance of Petersburg-Colonial Heights-Hopewell SMSA	14
Worked elsewhere	92
Not reported	437

MADISON	4,115
Madison	1,909
Culpeper Town	496
Balance of Culpeper	283
Orange	407
Greene	62
Albemarle	183
Charlottesville City	158
Louisa	24
Spotsylvania	15
Stafford	34
Fauquier	18
Page	9
Worked elsewhere	186
Not reported	334

MATHEWS	3,085
Mathews	1,514
Gloucester	222
Middlesex	58

MATHEWS, Continued	
York	146
Hampton City	70
Newport News City	182
James City	27
Williamsburg City	63
King William	34
Lancaster	34
Richmond City	22
Norfolk-Virginia Beach-Portsmouth SMSA	30
Worked elsewhere	185
Not reported	498

MECKLENBURG	12,227
Mecklenburg	9,478
Halifax	158
South Boston City	128
Charlotte	106
Lunenburg	97
Brunswick	339
Warren, NC.	120
Vance, NC.	110
Granville, NC.	24
Wake, NC.	4
Nottoway	84
Pittsylvania	3
Danville City	24
Lynchburg SMSA	4
Richmond MSA	138
Dinwiddie	4
Worked elsewhere	321
Not reported	1,085

MIDDLESEX	3,121
Middlesex	1,982
Newport News City	51
Hampton City	15
York	48
Richmond City	129
Henrico	9
Mathews	24
Gloucester	154
King and Queen	12
Essex	76
Richmond	13

Appendix 2, Continued

MIDDLESEX, Continued	
Lancaster	118
Northumberland	15
King William	88
New Kent	6
Williamsburg City	35
Worked elsewhere	133
Not reported	213

MONTGOMERY	25,793
Blacksburg Town	12,652
Christiansburg Town	3,898
Balance of Montgomery	3,501
Roanoke City	621
Roanoke	210
Salem City	670
Radford City	1,778
Pulaski Town	62
Balance of Pulaski	337
Giles	164
Floyd	74
Wythe	11
Bland	17
Craig	23
Franklin	20
Martinsville City	21
Worked elsewhere	527
Not reported	1,207

NELSON	4,541
Nelson	1,856
Lynchburg City	258
Amherst	254
Campbell	24
Charlottesville City	568
Albemarle	409
Augusta	54
Staunton City	29
Waynesboro City	343
Appomattox	27
Fluvanna	24
Greene	9
Worked elsewhere	253
Not reported	433

NEW KENT	3,764
New Kent	679
Richmond City, CBD	365
Balance of Richmond City	952
Henrico	427
Charles City	9
Chesterfield	39
Goochland	11
Hanover	80
Hopewell City	10
James City	184
Williamsburg City	239
Balance of Newport News-Hampton SMSA	111
King William	159
Worked elsewhere	158
Not reported	341

NORTHAMPTON	5,316
Northampton	4,050
Accomack	606
Norfolk City	31
Portsmouth City	13
Chesapeake City	5
Worcester, MD.	5
Wicomico, MD.	5
Worked elsewhere	48
Not reported	553

NORTHUMBERLAND	3,322
Northumberland	1,890
Lancaster	447
Richmond	175
Westmoreland	76
King George	38
Caroline	15
Essex	91
Middlesex	6
Richmond City	141
Worked elsewhere	41
Not reported	402

NOTTOWAY	5,799
Nottoway	3,917
Amelia	191

NOTTOWAY, Continued	
Prince Edward	204
Lunenburg	103
Brunswick	36
Dinwiddie	61
Richmond City	92
Chesterfield	53
Henrico	14
Petersburg City	85
Hopewell City	35
Prince George	16
Powhatan	9
Charlotte	10
Mecklenburg	6
Worked elsewhere	105
Not reported	862

ORANGE	7,704
Orange	4,611
Spotsylvania	86
Louisa	220
Culpeper Town	175
Balance of Culpeper	223
Madison	78
Albemarle	332
Charlottesville City	541
Fredericksburg City	284
Stafford	13
Fauquier	93
Washington, D.C.	43
Prince William	26
Balance of Washington, D.C. SMSA (VA part)	201
Balance of Washington, D.C. SMSA (MD part)	28
Richmond City	55
Balance of Richmond SMSA	13
Greene	73
Worked elsewhere	113
Not reported	496

PAGE	7,603
Page	4,462
Rockingham	467
Harrisonburg City	299
Rappahannock	25

Appendix 2, Continued

PAGE, Continued	
Front Royal Town	348
Balance of Warren	160
Shenandoah	126
Frederick	4
Winchester City	10
Fauquier	38
Waynesboro City	32
Albemarle	35
Charlottesville City	8
Augusta	45
Washington, D.C.	51
Alexandria City	40
Fairfax	232
Balance of Washington, D.C. SMSA	288
Worked elsewhere	119
Not reported	814

PATRICK	7,997
Patrick	4,434
Winston-Salem City, NC.	56
Balance of Forsyth, NC.	28
Greensboro City, NC.	6
Remainder of Greensboro-Winston-Salem-High Point SMSA	127
Henry	973
Martinsville City	578
Franklin	34
Floyd	66
Carroll	64
Galax City	2
Surry	736
Rockingham, NC.	31
Roanoke City	6
Salem City	7
Montgomery	6
Worked elsewhere	78
Not reported	765

PITTSYLVANIA	29,340
Pittsylvania	9,465
Danville City	11,256
Caswell, NC.	28
Lynchburg City	497

PITTSYLVANIA, Continued	
Altavista Town	2,254
Balance of Campbell	231
Balance of Lynchburg SMSA	15
Martinsville City	1,029
Henry	313
Rockingham, NC.	315
Greensboro City, NC.	62
Remainder of Greensboro-Winston-Salem-High Point SMSA	15
Burlington, NC. SMSA	16
Franklin	71
Halifax	64
South Boston City	74
Roanoke SMSA	44
Worked elsewhere	388
Not reported	3,203

POWHATAN	5,268
Powhatan	1,488
Richmond City, CBD	263
Balance of Richmond City	1,960
Henrico	183
Chesterfield	885
Goochland	67
Worked elsewhere	35
Not reported	387

PRINCE EDWARD	6,073
Prince Edward	4,302
Richmond City	53
Lynchburg City	52
Powhatan	63
Campbell	25
Petersburg City	13
Appomattox	162
Buckingham	44
Cumberland	92
Amelia	29
Nottoway	274
Lunenburg	61
Charlotte	112
Worked elsewhere	339
Not reported	452

PRINCE GEORGE	12,372
Prince George	6,517
Petersburg City, CBD	223
Balance of Petersburg	1,809
Colonial Heights City	240
Hopewell City, CBD	152
Balance of Hopewell City	1,389
Dinwiddie	19
Richmond City	218
Chesterfield	489
Balance of Richmond SMSA	121
Sussex	76
Surry	16
Southampton	3
Newport News-Hampton SMSA	22
Worked elsewhere	174
Not reported	904

PRINCE WILLIAM	70,501
Prince William	19,272
Washington, D.C., CBD	2,213
Balance of Washington, D.C.	7,744
Rockville City, MD.	131
Balance of Montgomery, MD.	893
Prince George's, MD.	912
Arlington	6,697
Alexandria City	4,326
Fairfax City	1,379
Falls Church City	613
Fairfax	12,746
Loudoun	495
Manassas City	5,637
Manassas Park City	127
Baltimore SMSA	45
Worked elsewhere	1,654
Not reported	5,617

PULASKI	14,926
Pulaski Town	4,949
Balance of Pulaski	4,861
Radford City	2,535
Blacksburg Town	326
Christiansburg Town	250
Balance of Montgomery	697
Giles	89

Appendix 2, Continued

PULASKI, Continued	
Bland	16
Wytheville Town	46
Balance of Wythe	109
Carroll	40
Floyd	15
Roanoke City	50
Roanoke	6
Galax City	13
Franklin	6
Mercer, WVA.	4
Worked elsewhere	183
Not reported	731

RAPPAHANNOCK	2,485
Rappahannock	1,095
Washington, D.C.	36
Loudoun	13
Prince William	7
Arlington	13
Alexandria City	31
Fairfax City	105
Falls Church City	22
Fairfax	37
Fauquier	233
Warren	221
Page	9
Madison	43
Culpeper Town	225
Balance of Culpeper	32
Orange	17
Worked elsewhere	56
Not reported	290

RICHMOND	3,100
Richmond	1,676
Lancaster	110
Northumberland	81
Westmoreland	240
Essex	413
King William	15
Richmond City	21
Hanover	19
Chesterfield	38
King George	113

RICHMOND, Continued	
Stafford	11
Fredericksburg City	24
Worked elsewhere	78
Not reported	261

ROANOKE	34,316
Vinton Town	1,357
Balance of Roanoke	4,044
Roanoke City, CBD	3,882
Balance of Roanoke City	13,311
Salem City	6,876
Botetourt	307
Craig	13
Radford City	96
Blacksburg Town	97
Balance of Montgomery	125
Alleghany	53
Covington City	50
Bedford	39
Bedford City	103
Franklin	169
Martinsville City	14
Henry	8
Worked elsewhere	592
Not reported	3,180

ROCKBRIDGE	7,433
Rockbridge	2,992
Buena Vista City	824
Lexington City	2,142
Lynchburg City	14
Amherst	48
Campbell	4
Augusta	188
Staunton City	162
Waynesboro City	72
Bath	45
Alleghany	11
Clifton Forge City	12
Covington City	39
Botetourt	156
Bedford	14
Roanoke City	118
Roanoke	14
Salem City	7

ROCKBRIDGE, Continued	
Worked elsewhere	224
Not reported	347

ROCKINGHAM	27,097
Rockingham	11,666
Harrisonburg City	10,458
Augusta	583
Staunton City	225
Waynesboro City	296
Albemarle	98
Charlottesville City	107
Greene	29
Page	279
Shenandoah	641
Hardy, WVA.	23
Pendleton, WVA.	20
Warren	28
Culpeper	13
Worked elsewhere	773
Not reported	1,861

RUSSELL	10,265
Russell	6,134
Washington	129
Bristol City	65
Scott	65
Wise	535
Norton City	82
Dickenson	445
Buchanan	1,170
Tazewell	902
Sullivan, TN.	50
Hawkins, TN.	6
Pike, KY.	6
Worked elsewhere	83
Not reported	593

SCOTT	7,775
Scott	2,761
Johnson City, TN.	40
Balance of Washington, TN.	17
Carter, TN.	10
Kingsport City, TN., CBD	259
Balance of Kingsport City	2,693

Appendix 2, Continued

SCOTT, Continued	
Bristol City, TN.	63
Balance of Sullivan, TN.	280
Kingsport City, TN.	9
Balance of Hawkins, TN.	226
Bristol City	86
Washington	26
Smyth	24
Russell	153
Wise	419
Worked elsewhere	217
Not reported	492

SHENANDOAH	12,521
Shenandoah	8,898
Frederick	453
Winchester City	550
Front Royal Town	485
Balance of Warren	85
Rockingham	449
Harrisonburg City	186
Clarke	10
Fauquier	14
Page	90
Washington, D.C.	88
Fairfax	181
Balance of Washington, D.C. SMSA	146
Worked elsewhere	189
Not reported	707

SMYTH	13,248
Marion Town	5,585
Balance of Smyth	5,185
Washington	654
Bristol City	117
Grayson	114
Galax City	13
Wytheville Town	94
Balance of Wythe	223
Tazewell	68
Russell	28
Bland	12
Bristol City, TN.	17
Kingsport City, TN.	10
Balance of Sullivan, TN.	22

SMYTH, Continued	
Buchanan	72
McDowell, WVA.	28
Worked elsewhere	371
Not reported	635

SOUTHAMPTON	7,255
Southampton	3,017
Portsmouth City	52
Norfolk City	76
Hampton City	10
Newport News City	167
Franklin City	2,194
Suffolk City	87
Isle of Wight	309
Surry	7
Sussex	53
Greensville	18
Emporia City	168
Northampton, NC.	23
Hertford, NC.	15
Worked elsewhere	77
Not reported	982

SPOTSYLVANIA	14,109
Spotsylvania	2,278
Fredericksburg City	5,985
Stafford	698
Caroline	141
Louisa	180
Orange	114
Culpeper	13
Richmond City	120
Hanover	67
Henrico	39
King George	299
Fauquier	10
Washington, D.C.	652
Manassas City	53
Prince William	807
Fairfax	643
Arlington	196
Balance of Washington, D.C. SMSA	477
Worked elsewhere	238
Not reported	1,099

STAFFORD	18,778
Stafford	3,181
Fredericksburg City	3,903
Spotsylvania	369
Washington, D.C.	1,489
Manassas City	68
Prince William	2,439
Alexandria City	793
Falls Church City	131
Fairfax	1,749
Fairfax City	177
Arlington	549
Loudoun	20
Charles, MD.	11
Balance of Washington, D.C. SMSA	286
King George	718
Caroline	23
Fauquier	38
Orange	12
Richmond SMSA	19
Worked elsewhere	173
Not reported	2,630

SURRY	2,269
Surry	1,011
Prince George	35
Hopewell City	69
Petersburg City	71
Dinwiddie	19
Sussex	128
Isle of Wight	229
Newport News City	108
James City	21
Williamsburg City	137
Henrico	13
Balance of Richmond SMSA	38
Norfolk-Virginia Beach-Portsmouth SMSA	86
Worked elsewhere	122
Not reported	182

SUSSEX	4,366
Sussex	[illegible]
Southampton	[illegible]
Franklin City	26

Appendix 2, Continued

SUSSEX, Continued	
Greensville	84
Emporia City	124
Dinwiddie	65
Petersburg City	460
Hopewell City	235
Colonial Heights City	32
Prince George	97
Surry	69
Isle of Wight	69
Charles City	16
Richmond City	54
Balance of Richmond SMSA	115
Newport News City	102
Norfolk-Virginia Beach-Portsmouth SMSA	47
Worked elsewhere	40
Not reported	573

TAZEWELL	17,173
Bluefield Town	1,636
Balance of Tazewell	9,509
Smyth	67
Russell	188
Buchanan	1,860
McDowell, WVA.	1,122
Mercer, WVA.	1,571
Wyoming, WVA.	5
Wythe	5
Washington	8
Dickenson	19
Bristol City	2
Pulaski	12
Giles	6
Radford City	12
Wise	17
Bland	53
Worked elsewhere	239
Not reported	842

WARREN	8,886
Front Royal	4,409
Balance of Warren	1,060
Winchester City	407
Frederick	253
Clarke	85
Fauquier	145
Rappahannock	166
Page	59
Shenandoah	196
Washington, D.C.	146
Loudoun	94
Manassas City	62
Prince William	146
Arlington	22
Alexandria City	22
Fairfax	394
Fairfax City	209
Balance of Washington, D.C. SMSA	19
Worked elsewhere	186
Not reported	806

WASHINGTON	18,285
Washington	9,471
Johnson City, TN.	23
Balance of Washington, TN.	12
Kingsport City, TN., CBD	21
Balance of Kingsport, TN.	156
Bristol City, TN.	1,011
Ballance of Sullivan, TN.	393
Hawkins, TN.	21
Bristol City	3,349
Scott	10
Smyth	1,150
Russell	419
Grayson	22
Worked elsewhere	767
Not reported	1,460

WESTMORELAND	5,212
Westmoreland	2,793
Northumberland	79
Richmond	446
Essex	271
Caroline	14
King George	502
Spotsylvania	20
Fredericksburg City	124
Stafford	12
Charles, MD.	44
Montgomery, MD.	21
Washington, D.C.	128
Prince William	18
Balance of Washingtn, D.C. SMSA	99
Worked elsewhere	238
Not reported	403

WISE	13,648
Wise	9,654
Norton City	1,671
Lee	58
Scott	96
Russell	334
Dickenson	433
Pike, KY.	42
Letcher, KY.	125
Harlan, KY.	55
Bristol City	6
Buchanan	11
Knott, KY.	5
Leslie, KY.	7
Worked elsewhere	123
Not reported	1,028

WYTHE	10,659
Wytheville Town	5,104
Balance of Wythe	2,726
Grayson	110
Galax City	31
Carroll	165
Pulaski Town	543
Balance of Pulaski	524
Radford City	166
Bland	66
Marion Town	150
Balance of Smyth	188
Tazewell	47
Montgomery	53
Floyd	8
Washington	6
Worked elsewhere	273
Not reported	499

Appendix 2, Continued

YORK	16,455
York	3,053
Newport News City, CBD	353
Balance of Newport News	2,731
Hampton City, CBD	143
Balance of Hampton City	3,997
Poquoson City	91
Williamsburg City	2,663
Gloucester	115
James City	446
Norfolk City, CBD	42
Balance of Norfolk City	301
Virginia Beach City	42
Portsmouth City	37
Chesapeake City	13
Surry	12
Richmond SMSA	47
Worked elsewhere	158
Not reported	2,209

ALEXANDRIA CITY	61,629
Alexandria City	15,279
Washington, D.C., CBD	6,006
Balance of Washington, D.C.	16,432
Rockville City, MD.	100
Balance of Montgomery, MD.	881
Prince George's, MD.	1,131
Charles, MD.	20
Arlington	8,573
Fairfax City	495
Falls Church City	633
Fairfax	5,013
Loudoun	136
Manassas City	33
Prince William	115
Calvert, MD.	23
Anne Arundel, MD.	60
Howard, MD.	28
Balance of Baltimore SMSA	177
Worked elsewhere	567
Not reported	5,927

BEDFORD CITY	2,479
Bedford City	1,180
Bedford	503
Lynchburg City	145
Roanoke City	106
Salem City	14
Botetourt	10
Amherst	10
Worked elsewhere	40
Not reported	471

BRISTOL CITY	7,794
Bristol City	4,375
Johnson City, TN.	23
Balance of Washington, TN.	28
Carter, TN.	8
Kingsport City, TN.	108
Bristol City, TN.	1,545
Balance of Sullivan, TN.	484
Hawkins, TN.	17
Scott	11
Washington	446
Smyth	47
Russell	80
Worked elsewhere	73
Not reported	549

BUENA VISTA CITY	2,767
Buena Vista City	1,560
Rockbridge	475
Lexington City	391
Amherst	22
Augusta	11
Staunton City	14
Waynesboro City	13
Bath	16
Roanoke City	38
Salem City	16
Worked elsewhere	37
Not reported	174

CHARLOTTESVILLE CITY	19,682
Charlottesville City	14,388
Albemarle	2,889
Greene	19
Fluvanna	59
Louisa	57
Waynesboro City	48
Orange	115
Nelson	18
Harrisonburg City	45
Lynchburg City	12
Campbell	14
Richmond City	10
Hanover	13
Worked elsewhere	152
Not reported	1,847

CHESAPEAKE CITY	48,842
Chesapeake City	13,404
Norfolk City, CBD	2,065
Balance of Norfolk City	13,201
Virginia Beach City	4,843
Portsmouth City, CBD	378
Balance of Portsmouth	8,471
Suffolk City	705
Currituck, NC.	13
Newport News City, CBD	55
Balance of Newport News	601
Hampton City, CBD	13
Balance of Hampton City	192
Williamsburg City	37
York	17
Franklin City	82
Southampton	15
Isle of Wight	83
Worked elsewhere	683
Not reported	3,984

CLIFTON FORGE CITY	1,873
Clifton Forge City	943
Covington City	284
Alleghany	247
Bath	112
Rockbridge	26
Roanoke City	18
Worked elsewhere	35
Not reported	208

Appendix 2, Continued

COLONIAL HEIGHTS CITY	7,917
Colonial Heights City	1,878
Petersburg City, CBD	287
Balance of Petersburg	1,666
Hopewell City, CBD	18
Balance of Hopewell City	662
Dinwiddie	33
Prince George	622
Richmond City	994
Chesterfield	1,077
Balance of Richmond SMSA	197
Brunswick	8
Worked elsewhere	71
Not reported	404

COVINGTON CITY	3,382
Covington City	2,520
Clifton Forge City	144
Alleghany	239
Bath	144
Greenbrier, WVA.	31
Roanoke City	25
Worked elsewhere	114
Not reported	165

DANVILLE CITY	20,318
Danville City	16,605
Pittsylvania	1,237
Caswell, NC.	156
Lynchburg City	29
Campbell	8
Martinsville City	201
Henry	81
Rockingham, NC.	253
Greensboro City, NC.	91
Balance of Greensboro-Winston-Salem-High Point SMSA	18
Person, NC.	40
Halifax	51
Worked elsewhere	250
Not reported	1,298

EMPORIA CITY	1,740
Emporia City	1,153
Greensville	121
Southampton	85
Sussex	8
Brunswick	33
Northampton, NC.	15
Halifax, NC.	21
Petersburg City	9
Hopewell City	11
Worked elsewhere	0
Not reported	284

FAIRFAX CITY	10,730
Fairfax City	2,697
Washington, D.C., CBD	331
Balance of Washington, D.C.	1,126
Rockville City, MD.	49
Balance of Montgomery, MD.	277
Prince George's, MD.	164
Arlington	903
Alexandria City	390
Falls Church City	197
Fairfax	3,342
Loudoun	81
Manassas City	67
Manassas Park City	18
Prince William	103
Anne Arundel, MD.	14
Worked elsewhere	143
Not reported	828

FALLS CHURCH CITY	5,165
Falls Church City	1,117
Washington, D.C., CBD	309
Balance of Washington, D.C.	1,060
Montgomery, MD.	166
Prince George's, MD.	106
Arlington	695
Alexandria City	46

FALLS CHURCH CITY, Continued	
Fairfax City	44
Fairfax	920
Loudoun	14
Manassas City	12
Prince William	10
Anne Arundel, MD.	14
Balance of Baltimore SMSA	14
Worked elsewhere	41
Not reported	597

FRANKLIN CITY	2,665
Franklin City	1,137
Chesapeake City	14
Portsmouth City	26
Norfolk City	73
Newport News City	51
Southampton	133
Suffolk City	103
Isle of Wight	460
Worked elsewhere	14
Not reported	654

FREDERICKSBURG CITY	6,675
Fredericksburg City	3,217
Spotsylvania	449
Stafford	505
Caroline	40
Louisa	15
Orange	24
Culpeper	41
Richmond City	15
Hanover	20
King George	258
Fauquier	17
Washington, D.C.	191
Prince William	287
Fairfax	245
Arlington	45
Balance of Washington, D.C. SMSA (VA part)	170
Balance of Washington, D.C. SMSA (MD part)	26
Worked elsewhere	108
Not reported	1,002

Appendix 2, Continued

GALAX CITY	2,828
Galax City	2,272
Carroll	271
Grayson	81
Wytheville Town	7
Pulaski Town	6
Patrick	6
Mount Airy City, NC.	19
Balance of Surry, NC.	7
Forsyth, NC.	6
Montgomery	5
Worked elsewhere	34
Not reported	114

HAMPTON CITY	55,175
Hampton City, CBD	2,356
Balance of Hampton City	27,670
Newport News City, CBD	1,825
Balance of Newport News	12,654
Poquoson City	65
Williamsburg City	699
Gloucester	10
James City	34
York	650
Norfolk City, CBD	118
Balance of Norfolk City	1,397
Virginia Beach City	356
Portsmouth City	124
Chesapeake City	84
Suffolk City	51
Isle of Wight	216
Surry	184
Richmond SMSA	69
Worked elsewhere	707
Not reported	5,906

HARRISONBURG CITY	8,625
Harrisonburg City	6,073
Rockingham	1,262
Augusta	137
Staunton City	89
Waynesboro City	23
Albemarle	14
Page	27
Worked elsewhere	317
Not reported	683

HOPEWELL CITY	9,961
Hopewell City, CBD	389
Balance of Hopewell City	4,635
Petersburg City, CBD	183
Balance of Petersburg City	764
Colonial Heights City	134
Prince George	1,068
Richmond City	858
Chesterfield	739
Balance of Richmond SMSA	135
Worked elsewhere	108
Not reported	948

LEXINGTON CITY	2,395
Lexington City	1,680
Rockbridge	161
Buena Vista City	98
Clifton Forge City	27
Roanoke City	14
Roanoke	14
Salem City	17
Worked elsewhere	118
Not reported	266

LYNCHBURG CITY	29,769
Lynchburg City, CBD	2,818
Balance of Lynchburg	21,499
Amherst	1,185
Appomattox	64
Altavista Town	87
Balance of Campbell	393
Pittsylvania	13
Danville City	9
Bedford City	124
Bedford	306
Nelson	23
Rockbridge	15
Roanoke City	42
Charlottesville City	9
Albemarle	18
Worked elsewhere	487
Not reported	2,677

MANASSAS CITY	7,333
Manassas City	2,330
Washington, D.C., CBD	132
Balance of Washington, D.C.	470
Rockville City, MD.	14
Balance of Montgomery, MD.	181
Prince George's, MD.	109
Arlington	398
Alexandria City	148
Fairfax City	262
Falls Church City	59
Fairfax	1,040
Loudoun	75
Manassas Park City	35
Prince William	1,127
Worked elsewhere	171
Not reported	782

MANASSAS PARK CITY	2,805
Manassas Park City	138
Washington, D.C., CBD	8
Balance of Washington, D.C.	144
Rockville City, MD.	16
Balance of Montgomery, MD.	49
Prince George's, MD.	15
Arlington	167
Alexandria City	73
Fairfax City	221
Falls Church City	98
Fairfax	653
Loudoun	73
Manassas City	455
Prince William	364
Worked elsewhere	66
Not reported	265

MARTINSVILLE CITY	7,673
Martinsville City	5,173
Roanoke City	26
Salem City	9
Henry	1,595
Danville City	32
Pittsylvania	29
Franklin	11
Patrick	48

Appendix 2, Continued

MARTINSVILLE CITY, Continued	
Eden City, NC.	20
Balance of Rockingham, NC.	17
Lynchburg SMSA	13
Worked elsewhere	72
Not reported	628

NEWPORT NEWS CITY	66,763
Newport News City, CBD	3,212
Balance of Newport News	36,687
Hampton City, CBD	629
Balance of Hampton City	9,966
Poquoson City	99
Williamsburg City	3,271
Gloucester	192
James City	195
York	1,990
Norfolk City, CBD	57
Balance of Norfolk City	1,234
Virginia Beach City	401
Portsmouth City	406
Chesapeake City	27
Suffolk City	77
Isle of Wight	312
Surry	266
Richmond SMSA	176
Worked elsewhere	1,109
Not reported	6,457

NORFOLK CITY	127,920
Norfolk City, CBD	8,672
Balance of Norfolk City	64,806
Virginia Beach City	8,762
Portsmouth City, CBD	211
Balance of Portsmouth	3,830
Chesapeake City	2,415
Suffolk City	213
Currituck, NC.	12
Newport News City, CBD	191
Balance of Newport News	1,668
Hampton City, CBD	22
Balance of Hampton City	692
Williamsburg City	101
James City	21
York	11
Franklin City	44

NORFOLK CITY, Continued	
Southampton	12
Isle of Wight	22
Worked elsewhere	21,313
Not reported	14,902

NORTON CITY	1,634
Norton City	1,054
Wise	440
Scott	4
Russell	11
Dickenson	12
Washington	6
Worked elsewhere	26
Not reported	81

PETERSBURG CITY	17,325
Petersburg City, CBD	850
Balance of Petersburg	8,117
Colonial Heights City	997
Hopewell City, CBD	63
Balance of Hopewell City	1,000
Dinwiddie	364
Prince George	1,991
Richmond City	1,146
Chesterfield	913
Balance of Richmond SMSA	192
Sussex	22
Amelia	17
Southampton	39
Worked elsewhere	229
Not reported	1,385

POQUOSON CITY	4,055
Poquoson City	740
Newport News City, CBD	124
Balance of Newport News	938
Hampton City, CBD	72
Balance of Hampton City	1,399
Williamsburg City	44
York	98
Norfolk City	189
Virginia Beach City	13
Portsmouth City	9
Chesapeake City	24

POQUOSON CITY, Continued	
Worked elsewhere	59
Not reported	346

PORTSMOUTH CITY	41,605
Portsmouth City, CBD	1,913
Balance of Portsmouth	22,026
Norfolk City, CBD	1,030
Balance of Norfolk City	6,725
Virginia Beach City	1,156
Chesapeake City	2,336
Suffolk City	1,216
Newport News City, CBD	71
Balance of Newport News	639
Hampton City, CBD	14
Balance of Hampton City	140
Williamsburg City	28
York	41
Franklin City	28
Southampton	24
Isle of Wight	211
Worked elsewhere	559
Not reported	3,448

RADFORD CITY	5,242
Radford City	3,382
Roanoke City	75
Roanoke	13
Salem City	40
Blacksburg Town	267
Christiansburg Town	160
Balance of Montgomery	297
Pulaski Town	73
Balance of Pulaski	429
Giles	6
Carroll	6
Bland	5
Franklin	18
Patrick	7
Henry	8
Worked elsewhere	283
Not reported	173

Appendix 2, Continued

RICHMOND CITY	98,492
Richmond City, CBD	17,873
Balance of Richmond City	53,219
Henrico	9,891
Charles City	23
Chesterfield	4,202
Goochland	140
Hanover	1,357
New Kent	36
Powhatan	111
Colonial Heights City	35
Petersburg City	219
Hopewell City	288
Dinwiddie	39
Prince George	53
James City	7
Williamsburg City	40
Balance of Newport News-Hampton SMSA	23
Surry	13
King William	41
Worked elsewhere	1,085
Not reported	9,797

ROANOKE CITY	42,672
Roanoke City, CBD	5,626
Balance of Roanoke City	21,682
Salem City	5,447
Vinton Town	796
Balance of Roanoke Co.	2,496
Botetourt	500
Radford City	18
Blacksburg Town	43
Balance of Montgomery	13
Alleghany	115
Covington City	21
Clifton Forge City	12
Bedford	150
Bedford City	27
Franklin	104
Pulaski	14
Worked elsewhere	577
Not reported	5,031

SALEM CITY	11,151
Salem City	5,489
Roanoke City, CBD	617
Balance of Roanoke City	3,052
Vinton Town	33
Balance of Roanoke Co.	677
Botetourt	25
Craig	13
Radford City	103
Blacksburg Town	50
Balance of Montgomery	47
Alleghany	13
Franklin	13
Giles	12
Worked elsewhere	394
Not reported	613

SOUTH BOSTON CITY	2,940
South Boston City	1,995
Halifax	575
Danville City	12
Mecklenburg	27
Person, NC.	77
Worked elsewhere	84
Not reported	170

STAUNTON CITY	10,430
Staunton City	6,462
Waynesboro City	730
Augusta	2,072
Rockbridge	61
Rockingham	167
Harrisonburg City	53
Albemarle	13
Charlottesville City	126
Lynchburg City	13
Nelson	8
Bath	22
Worked elsewhere	186
Not reported	517

SUFFOLK CITY	19,605
Suffolk City	10,302
Norfolk City, CBD	140
Balance of Norfolk City	1,146
Virginia Beach City	263
Portsmouth City, CBD	170
Balance of Portsmouth	2,262
Chesapeake City	416
Newport News City, CBD	99
Balance of Newport News	528
Hampton City	52
Williamsburg City	62
York	15
Franklin City	445
Southampton	31
Isle of Wight	764
Worked elsewhere	359
Not reported	2,551

VIRGINIA BEACH CITY	128,649
Virginia Beach City	60,473
Norfolk City, CBD	4,748
Balance of Norfolk City	36,751
Portsmouth City, CBD	218
Balance of Portsmouth	3,937
Chesapeake City	4,348
Suffolk City	362
Currituck, NC.	50
Newport News City, CBD	175
Balance of Newport News	1,321
Hampton City, CBD	27
Balance of Hampton City	605
Poquoson City	13
Williamsburg City	92
James City	12
York	37
Franklin City	13
Isle of Wight	50
Worked elsewhere	5,523
Not reported	9,894

WAYNESBORO CITY	7,181
Waynesboro City	5,172
Staunton City	179
Augusta	568
Rockingham	20

Appendix 2, Continued

WAYNESBORO, Continued	
Harrisonburg City	26
Albemarle	276
Charlottesville City	141
Nelson	43
Worked elsewhere	223
Not reported	533

WILLIAMSBURG CITY	4,335
Williamsburg City	3,287
Newport News City	350
Hampton City	79
James City	170
York	28
Norfolk City	11
Virginia Beach City	16
Suffolk City	18
Richmond SMSA	25
Worked elsewhere	77
Not reported	274

WINCHESTER CITY	9,205
Winchester City	5,628
Frederick	1,440
Washington, D.C.	67
Alexandria City	16
Loudoun	24
Fairfax	41
Balance of Washington, D.C. SMSA (VA part)	32
Balance of Washington, D.C. SMSA (MD part)	30
Clarke	704
Front Royal Town	87
Balance of Warren	45
Shenandoah	22
Hampshire, WVA.	12
Martinsburg City, WVA.	12
Balance of Berkeley, WVA.	36
Jefferson, WVA.	20
Frederick, MD.	15
Hagerstown, MD. SMSA	48
Worked elsewhere	211
Not reported	715

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Map 1.
Commuting Patterns for Virginia Localities, 1980

Number of Workers Living in Locality

- Less than 5,000
- 5,000 to 9,999
- 10,000 to 49,999
- 50,000 or more

Notes for Maps 1-11

Figures within circles indicate proportion working in home locality.

Percent of workers out-commuting to locality to which arrow points (not shown if less than 5 percent).

SMSA's are mapped according to their 1980 boundaries. Commuting patterns between localities within SMSA's are shown on Maps 2 through 11.